



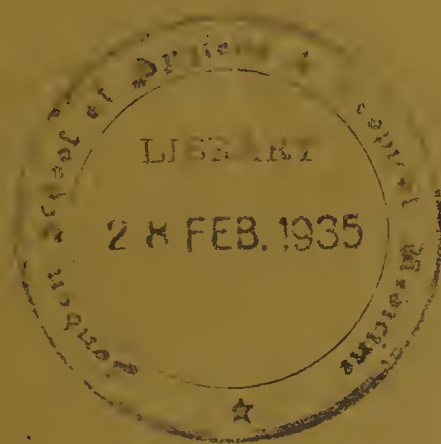
TANGANYIKA TERRITORY

# Annual Medical and Sanitary Report

For year ended 31st December

## 1933

Including the Annual Report of  
the Medical Laboratory,  
Dar es Salaam



1934

DAR ES SALAAM

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1709



OFFICE OF THE  
DIRECTOR OF MEDICAL AND SANITARY SERVICES,  
DAR ES SALAAM,  
TANGANYIKA TERRITORY.

*19th September, 1934.*

Sir,

I have the honour to submit, for the information of His Excellency the Governor and for transmission to the Right Honourable the Secretary of State for the Colonies, the Medical Report on the health and sanitary condition of the Tanganyika Territory for the year 1933 together with the Returns, etc., appended thereto.

I have the honour to be,

Sir,

Your obedient servant,

A. H. OWEN,  
*Director of Medical and Sanitary Services.*

THE HONOURABLE

THE CHIEF SECRETARY TO THE GOVERNMENT,

DAR ES SALAAM.



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LABORATORY REPORT.

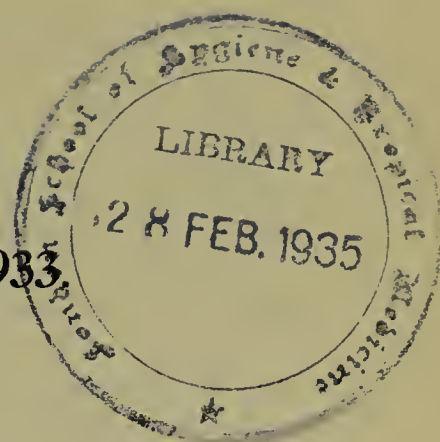
(Dr. H. J. O'D. Burke-Gaffney, B.A., M.D., B.Ch., B.A.O.).

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# TANGANYIKA TERRITORY

## Annual Medical Report for 1933



### SECTION I.—ADMINISTRATION.

#### (a) Staff. *European:*

Director of Medical and Sanitary Services.	2 Senior Health Visitors.
Deputy Director of Medical Service.	6 Health Visitors.
Deputy Director of Sanitary Service.	26 Nursing Sisters.
Deputy Director of Laboratory Service.	1 Laboratory Assistant.
4 Senior Medical Officers.	1 Chief Clerk.
4 Senior Health Officers.	2 Clerks.
1 Sleeping Sickness Officer.	1 Storekeeper.
41 Medical Officers.	2 Assistant Storekeepers.
1 Senior Dental Surgeon.	1 Medical Instructor.
1 Dental Surgeon.	1 Assistant Medical Instructor.
1 Assistant Bacteriologist.	Superintendent and Matron, Mental Hospital.
1 Analytical Chemist.	1 Senior Sanitary Superintendent.
1 Matron.	19 Sanitary Superintendents.
3 Senior Nursing Sisters.	1 Dental Mechanic.

#### *Asiatic:*

1 Assistant Surgeon.	1 1st Grade Clerk.
3 Senior Sub-Assistant Surgeons.	5 2nd Grade Clerks.
51 Sub-Assistant Surgeons.	13 3rd Grade Clerks.
28 Compounders.	1 4th Grade Clerk.
1 Special Grade Clerk.	

#### *African:*

17 Clerks.	Sanitary Labourers: average number employed 1,100.
96 Dispensers.	7 Motor Drivers.
152 Sanitary Inspectors.	
2 Vaccinators.	
Hospital Orderlies, Nurses and Menials: average number employed 760.	

#### APPOINTMENTS. *European:*

Miss E. Bullock to be a Nursing Sister from 7th April.  
Miss E. McNab                    "                    "                    "                    18th May.  
Miss A. Cowley                   "                    "                    "                    13th July.  
Mr. R. Stewart to be a Sanitary Superintendent from 1st July.  
Miss O. M. Cox to be a Sister and Health Visitor from 23rd March.

ACTING APPOINTMENTS. *European :*

- Dr. W. J. Aitken, Acting Senior Health Officer from 7th January to 27th August.  
Dr. B. O. Wilkin, Acting Senior Health Officer from 10th January to 22nd August.  
Mr. W. H. Jones, Acting Storekeeper from 1st January to 22nd October.  
Mr. J. H. Stafford, Acting Superintendent, Mental Hospital, from 26th January to end of the year.  
Mrs. A. L. Stafford, Acting Matron, Mental Hospital, from 26th January to the end of the year.  
Mr. W. M. Mackay, Acting Senior Sanitary Superintendent from 7th April to 16th December.  
Miss R. V. G. Daye, Acting Senior Nursing Sister from 28th February to 9th October.  
Dr. F. R. Lockhart, Acting Senior Medical Officer from 17th June to the end of the year.  
Dr. W. J. Aitken, Acting Municipal Secretary from 14th July to 1st September.  
Dr. R. Nixon, Acting Municipal Secretary from 1st September to the end of the year.  
Miss B. G. Allardes, Acting Matron from 3rd November to the end of the year.  
Dr. A. McKenzie, Acting Senior Medical Officer, from 1st January to 14th January.  
Dr. B. O. Wilkin, Acting Senior Health Officer from 22nd September to the end of the year.  
Dr. A. R. Lester, Acting Senior Health Officer from 1st January to 22nd September.  
Mr. A. S. Newton, Acting Senior Dental Surgeon from 11th December to the end of the year.

*Asiatic :*

Nil.

PROMOTIONS. *European :*

Nil.

*Asiatic :*

- Mr. C. K. Shekharan, 3rd Grade Clerk from 13th June.

RETIREMENTS. *European :*

- |                                    |                                    |
|------------------------------------|------------------------------------|
| Dr. A. S. Mackie, 17th June.       | Mr. J. Spittles, 4th October.      |
| Miss E. L. Kemsley, 9th September. | Mrs. C. M. Spittles, 6th November. |

*Asiatic :*

Nil.

TRANSFERS. *European :*

Nil.

*Asiatic :*

Nil.

RESIGNATIONS. *European :*

- |                                     |                            |
|-------------------------------------|----------------------------|
| Miss E. A. Cordwell, 15th February. | Miss M. A. L. Hutton, 28th |
| Miss G. F. F. Waite, 14th July.     | February.                  |

*Asiatic :*

Nil.



APPOINTMENTS TERMINATED. *European:*

Nil.

*Asiatic:*

Mr. S. L. Dourado, Compounder, 17th April.

RETRENCHMENTS. *European:*

Nil.

*Asiatic:*

Nil.

DEATHS. *European:*

Dr. R. Bury.

Dr. J. J. B. Edmond.

Mr. W. Whitley.

*Asiatic:*

Nil.

INVALIDINGS. *European:*

Dr. L. A. Willmott.

*Asiatic:*

Nil.

**(b) Legislation.**

The following Ordinances, Rules and Regulations under Ordinances affecting public health were enacted during the year:—

G.N. 14. The Township Ordinance.	“The Township Building Areas (Amendment) Rules, 1933.”
G.N. 19. The Dangerous Drugs Ordinance.	“Dangerous Drugs (Acetyldihydrocodeinone) Order, 1933.”
G.N. 107. Air Navigation.	The Air Navigation (Amendment No. 3) Direction, 1933, to Directions, 1931.
G.N. 181. The Drugs and Poisons Ordinance.	“The Poisonous Substances for Agricultural and Other Purposes Rules, 1933.”
G.N. 182. The Drugs and Poisons Ordinance.	“The Poisons Order, 1933.”

**(c) Financial.**

	£
Revenue ... ..	6,226
Expenditure ... ..	190,716

(See also Table II.)

**Special Expenditure.**

The Colonial Development Fund provided funds for the continuance of the special Malaria Research and Tuberculosis Investigation and the following amounts were expended during the year in this connection:—

	£
Malaria Research ... ..	6,057
Tuberculosis Investigation ... ..	984

## SECTION II.—PUBLIC HEALTH.

### (a) General Remarks.

#### EXPENDITURE.

The estimates of expenditure for the year 1933 provided the sum of £210,659 under the head "Medical and Sanitation," a reduction of £18,645 on the provision for 1932-1933.

#### ASSISTANCE TO MEDICAL MISSIONS.

There has been no alteration in the policy set forth in previous reports. Assistance in the form of drugs and equipment is given to missionary societies engaged in campaigns against specific diseases such as hookworm, leprosy and sleeping sickness. Financial contributions are also made to assist in maternity and child welfare work. During 1933 £982 was paid for this purpose to the Church Missionary Society and £150 to the Africa Inland Mission.

#### ECONOMIES EFFECTED.

No important changes in the medical services have been made during the year. In February a medical officer was sent to Musoma to take over charge of the new hospital built by the Native Authorities and to supervise sleeping sickness measures in this area. In December the Medical Officer at Mahenge was transferred for duty at Lindi and the Mahenge hospital is now in the charge of a Senior Sub-Assistant Surgeon. Under the heading of "Personal Emoluments" savings were effected by allowing senior posts to remain unfilled and by the non-replacement of staff casualties. Any members of the subordinate staff found to be inefficient were discharged and every effort has been made to reduce the cost under the heading "Upkeep of Hospitals" to as low a figure as possible compatible with the maintenance of an efficient service. Owing to the fall in wholesale prices it has been possible to obtain adequate supplies of drugs, dressings and equipment at considerably less cost than in previous years.

#### HOSPITALS.

No major works were carried out during the year. The alterations at the Sewa Hadji Hospital at Dar es Salaam have been completed, and the result is most satisfactory. During 1934 extensive renovations and repairs will be done at the European Hospital, Dar es Salaam.

#### PATIENTS ATTENDING AT HOSPITALS.

There was an increase of 1,430 in the number of in-patients admitted to hospitals and of 34,680 in the number of out-patients treated at government

hospitals, making a total increase of 36,110. The figures for the last six years are given below :—

Year			In-patients			Out-patients	Total
1928	...	...	31,589	...	356,106	...	387,695
1929	...	...	33,470	...	360,001	...	393,471
1930	...	...	33,052	...	393,783	...	426,835
1931	...	...	31,743	...	423,169	...	454,912
1932	...	...	29,250	...	479,517	...	508,767
1933	...	...	30,680	...	514,197	...	544,877

### MATERNITY AND CHILD WELFARE.

Maternity and child welfare work is carried on by the Government and by the missionary societies. The clinics at Tabora and Mwanza have been absorbed into the general work of the hospitals and separate figures for these two clinics are not shown.

The figures for the remaining clinics are as follows :—

	1928	1929	1930	1931	1932	1933
Total number of confinements admitted to clinics ... ..	1,645	2,521	2,399	2,710	2,344	2,673
Total number of confinements attended to elsewhere... ..	167	55	49	499	190	66
Total number of new cases (in- and out-patients) seen at clinics:						
Mothers ... ..	16,686	28,858	24,569	30,558	35,283	25,485
Children ... ..	24,870	38,682	31,553	45,418	46,806	42,932
Total number of attendances at clinics:						
Mothers ... ..	74,349	148,006	164,833	251,704	273,763	292,916
Children ... ..	90,747	197,021	219,133	352,155	454,401	485,798

### NATIVE STAFF.

On 31st December, 1933, 92 trained African Dispensers were employed by the Medical Department. The usual revision course was held during the year, twelve dispensers attending. In addition twelve learners have been under training at the Sewa Hadji Hospital.

The trained African Sanitary personnel was composed of 15 Urban Inspectors and five probationary Urban Inspectors. One hundred and twenty District Inspectors were employed, of whom 44 have passed a further test and are members of the African Civil Service. The remaining 76 have taken the examination as District Inspectors but have not passed the efficiency bar examination.

### TRIBAL DISPENSARIES.

The Tribal Dispensaries, controlled and financed by the Native Administrations, continue to do useful work. Arrangements were made during the year for the District Medical Officers to exercise closer supervision over this work. In the more prosperous areas well designed permanent buildings of stone with cement floors are being built from tribal funds. In the Lake Province the experiment was tried of combining the work of the District Sanitary Inspectors and of the Tribal Dressers. Sanitary Inspectors were given instruction at the Mwanza Native Hospital in medical work, while



Tribal Dressers attended at the Health Office and were taught practical rural sanitation. It is believed that if curative and preventive work is carried out by the same individual, more satisfactory results will follow. If the experiment is successful, it will be extended to other areas.

The attendances during the year were 402,011, an increase of 27,397 over 1932. The figures for the last six years are as follows :—

1928	...	...	...	141,300
1929	...	...	...	190,545
1930	...	...	...	352,423
1931	...	...	...	369,735
1932	...	...	...	374,614
1933	...	...	...	402,011

Particulars of the number of Tribal Dispensaries open during 1933 and of new ones to be built in 1934 are given in the following table :—

#### NUMBER OF TRIBAL DISPENSARIES BY PROVINCES.

				Open during 1933			To be opened in 1934
Central	...	...	...	23	...	...	—
Eastern	...	...	...	33	...	...	2
Iringa ...	...	...	...	42	...	...	—
Lake ...	...	...	...	89	...	...	4
Lindi ...	...	...	...	50	...	...	—
Northern	...	...	...	16	...	...	2
Tanga ...	...	...	...	27	...	...	—
Western	...	...	...	29	...	...	—
				309	...	...	8
Total = 317.							

#### TUBERCULOSIS.

The work of the tuberculosis unit on Kilimanjaro with headquarters at Kibongoto was continued throughout the year. Details of the unit's programme of work were given on pages 10 and 11 of the Annual Medical Report for 1932. The only change has been due to the absence of the Tuberculosis Research Officer, who went on leave in April, 1933, and shortly afterwards was awarded a grant from the funds administered by the Trustees of the Carnegie Corporation of New York. With the aid of this grant he is continuing his investigations in England into the characteristics of the tubercle bacilli common in East Africa and of other bacilli isolated from the sputum of African natives. This officer is due to return to the Territory in August, 1934.

#### VENEREAL DISEASES AND YAWS.

Treatment has been continued on the same lines as in former years. The figures for the last six years are as follows :—

				Syphilis		Yaws
1928	...	...	...	24,367	...	127,439
1929	...	...	...	25,752	...	126,328
1930	...	...	...	25,864	...	137,112
1931	...	...	...	29,662	...	112,128
1932	...	...	...	35,229	...	114,115
1933	...	...	...	33,058	...	109,113

## HEALTH OF PRISONERS.

The general health of the prisoners throughout the Territory was satisfactory. The death rate per 1,000 shows a further decrease of 6·92. The figures for the last six years are as follows :—

			Number of deaths		Daily average number of prisoners during the year		Deaths per 1,000 to average number of prisoners
1928	...	...	49	...	1,826·50	...	26·83
1929	...	...	23	...	1,905·10	...	12·07
1930	...	...	48	...	2,106·10	...	22·79
1931	...	...	51	...	2,370·00	...	24·89
1932	...	...	58	...	2,417·00	...	23·99
1933	...	...	43	...	2,518·09	...	17·07

## SANITATION.

Essential sanitary services have been well maintained in the townships throughout the Territory. As foreshadowed in last year's report it has not been possible to carry out any part of the scheme for the drainage and sewerage of Dar es Salaam and Tanga.

It is too early to estimate the results of the enactment of the Minor Settlements Ordinance, which provided local sanitary authorities with powers for the sanitary control of minor settlements.

Inspections of estates near the Central and Tanga railway lines have shown that the health of labourers has been generally satisfactory.

## INFECTIOUS DISEASES.

*Smallpox.*—With the exception of one area in the south-west the whole Territory was free from smallpox during 1933. The area mentioned is composed of the Iringa, Njombe, Rungwe and Mbeya districts of the Iringa Province and small portions of the Western and Lindi provinces adjoining these districts. In this area 626 cases of smallpox were reported. The disease was mild in type, only 38 deaths occurring.

*Plague.*—Nine cases with five deaths were reported from the whole Territory. Of these three with one death were in the endemic area near Mbulu and six with four deaths from Iringa.

*Influenza.*—No epidemic outbreaks of this disease were reported.

The following table shows the incidence of dangerous infectious diseases during the last six years :—

Year			Smallpox		Cerebro-spinal meningitis		Plague		Influenza	
			Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
1928	...	...	26	—	7	3	43	42	540	8
1929	...	...	178	22	10	6	—	—	33	—
1930	...	...	4,335	734	6	3	15	15	56	—
1931	...	...	1,733	148	4	2	238	172	1,568	22
1932	...	...	768	48	7	1	12	10	123	30
1933	...	...	626	38	—	—	9	5	—	—

*Leprosy.*—The abolition of compulsory segregation and the establishment of treatment centres continues to be the policy of the Government who are greatly indebted to the missionary societies for the help they give in supervising leper settlements near mission stations.

*Trypanosomiasis*.—Routine work has been continued on the lines set forth in previous reports. In addition much has been done to check the spread of the disease in the Western Province and in the Bukoba and Biharamulo districts of the Lake Province. In the Uha country, north of Kigoma in the Western Province, eleven concentration areas were selected and settled with natives who previously lived in fly-infested areas.

The discovery, in Uganda, of a few labourers from Tanganyika who were suffering from the Rhodesian form of sleeping sickness raised the question of the danger of the *G. palpalis* areas of Uganda becoming infected with *T. rhodesiense*. At the request of the Uganda Government the Sleeping Sickness Officer visited Entebbe in February and discussed the matter. It was agreed to do everything possible to prevent Tanganyika natives who have resided in, or passed through, sleeping sickness areas from crossing the boundary between Uganda and Tanganyika. In addition the natives near the border will be concentrated and further investigations will be made into sleeping sickness conditions in other portions of the Bukoba District where, so far as is known, the Rhodesian form of the disease has never appeared.

Research work at the laboratory at Tinde was continued throughout the year and the results published in various scientific journals.

The following table shows the number of cases and deaths in the different provinces for the last six years :—

Provinces	New cases diagnosed during the year						Deaths					
	1928	1929	1930	1931	1932	1933	1928	1929	1930	1931	1932	1933
Lake ...	172	143	228	138	605	623	69	53	65	64	89	122
Western ...	1,548	3,111	1,513	1,304	2,251	1,621	295	520	442	477	385	347
Central ...	6	—	—	—	—	54	—	—	—	—	—	6
Eastern ...	—	—	1	—	—	—	—	—	—	—	—	—
Lindi ...	25	8	5	—	5	6	31	7	3	3	3	3
Northern ...	—	—	3	—	—	—	—	—	—	—	—	—
Total ...	1,751	3,262	1,750	1,442	2,861	2,304	397	580	510	544	477	478

*The Enteric Group*.—Eighty cases were treated with thirteen deaths.

*Relapsing Fever*.—One thousand one hundred and seventy-one cases with eleven deaths were reported.

*Malaria*.—Thirty-five thousand nine hundred and twenty-six cases of all types were treated during the year, 45 deaths occurred.

*Blackwater Fever*.—Thirty-seven cases with nine deaths were reported.

*Dysentery*.—One thousand four hundred and twenty-one cases were treated of which 756 were amœbic and 147 bacillary. The total deaths were nineteen, ten being amœbic and four bacillary.

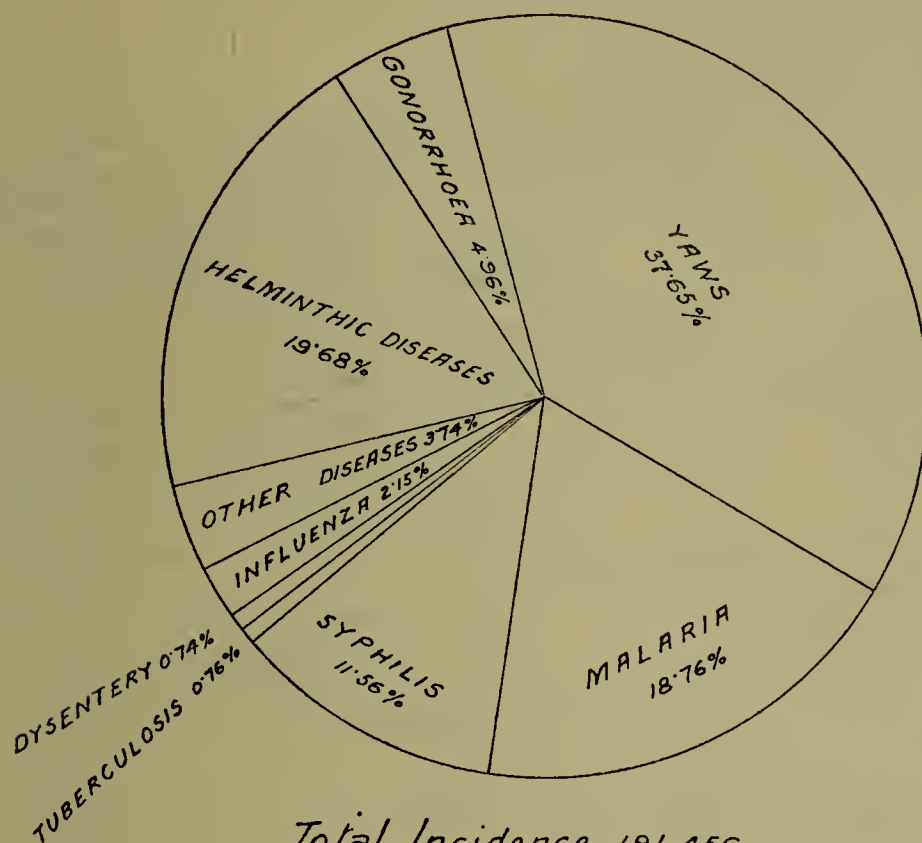
*Yaws*.—Seventy-two thousand and sixty-six cases with six deaths were treated during the year.

*Syphilis*.—Twenty-two thousand one hundred and thirty-seven cases of all types were treated with 21 deaths.

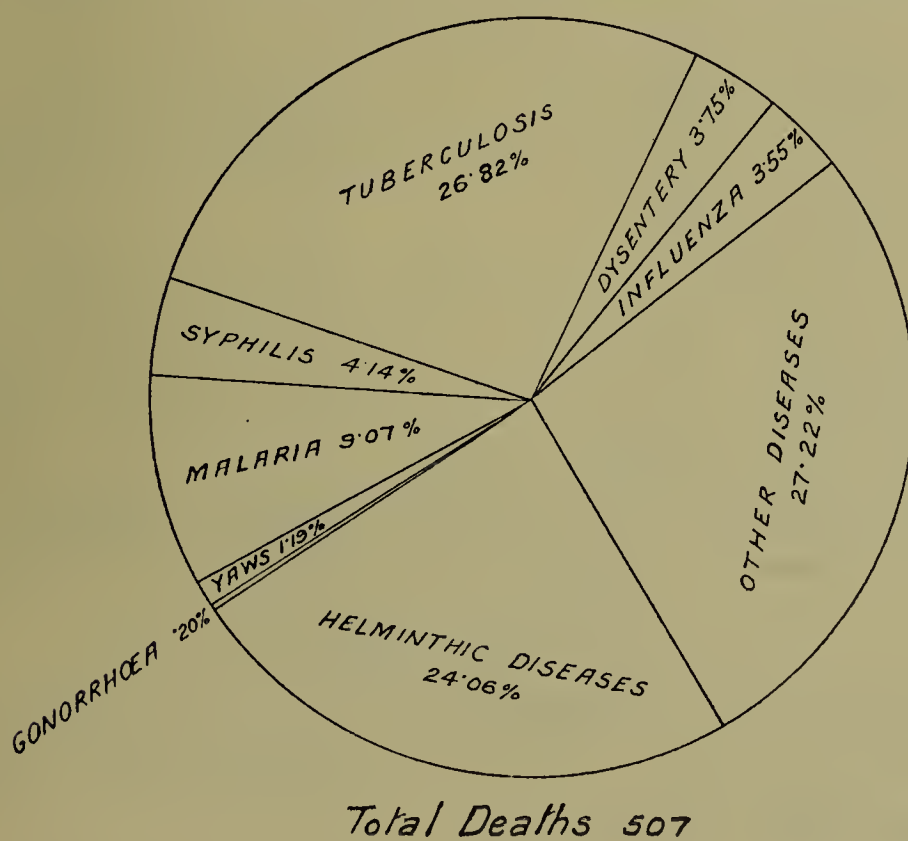
*Gonorrhœa*.—Nine thousand and four cases with one death were reported.



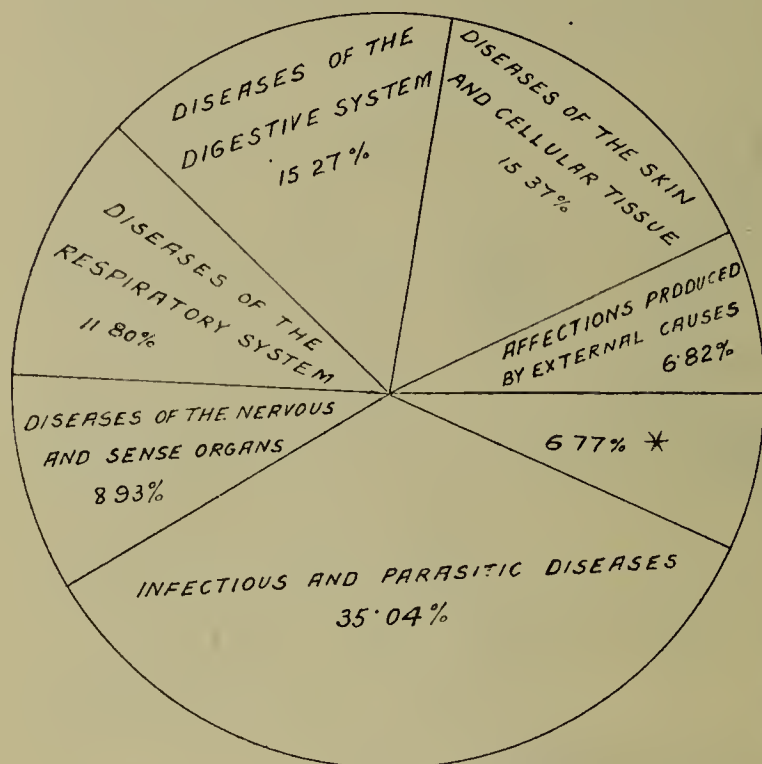
*Proportion in Percentages of Infectious and Parasitic Diseases  
In and Out-Patients treated at Hospitals and Dispensaries.*



*Proportion of Deaths in Percentages of Infectious & Parasitic Diseases  
In and Out-Patients at Hospitals and Dispensaries.*



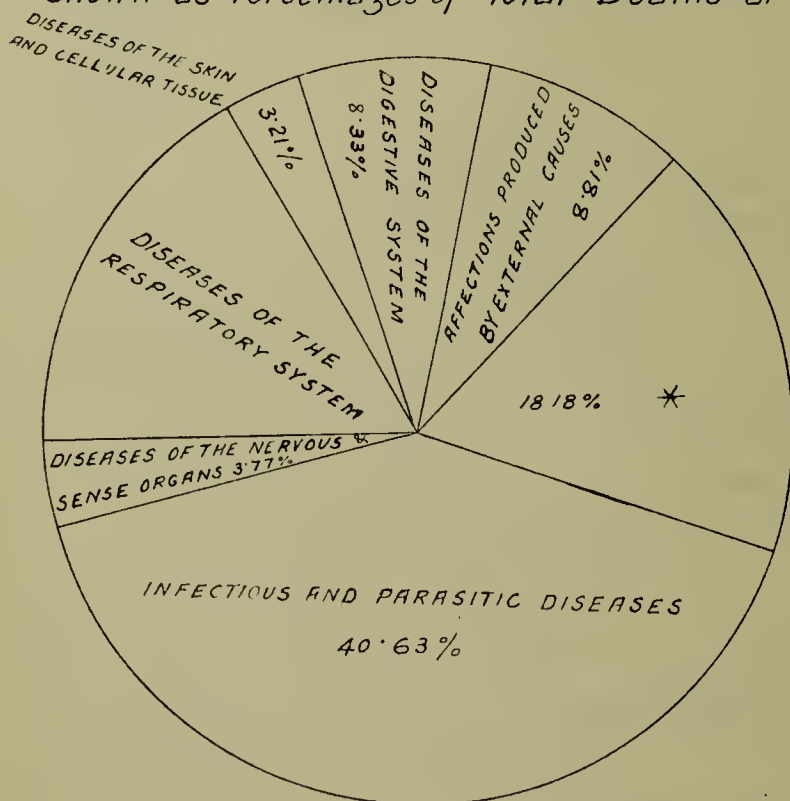
Proportion of Infectious Parasitic Systemic and other Diseases shown as percentages of total cases treated at Hospitals & Dispensaries.



Cancer and other Tumors	0.07%
Rheumatism Diseases of Nutrition and of Endocrine Glands and other General Diseases	1.13%
Diseases of the Blood and blood-forming Organs	0.69%
Chronic Poisoning	0.01%
Diseases of the Circulatory System	0.45%
* Non-Venereal Diseases of the Genito-urinary System and Annexa	0.89%
Diseases of Pregnancy Childbirth and the puerperal State	0.20%
Diseases of the Bones and organs of Locomotion	2.67%
Diseases of early Infancy	0.03%
Old Age	0.10%
Ill-defined Diseases	0.53%

Total Incidence 546,361.

Proportion of Deaths of Infectious, Parasitic, Systemic & other Diseases shown as Percentages of Total Deaths at Hospitals & Dispensaries.



Cancer and other Tumors	3.61%
Rheumatism Diseases of Nutrition and of Endocrine Glands and other General Diseases	0.64%
Diseases of the Blood and blood-forming Organs	1.12%
Diseases of the Circulatory System	2.08%
* Non-Venereal Diseases of the Genito-urinary System and Annexa	4.17%
Diseases of Pregnancy Childbirth and the Puerperal State	2.40%
Diseases of the Bones and organs of Locomotion	1.36%
Congenital Malformations	0.08%
Diseases of early Infancy	0.22%
Old Age	1.44%
Ill-defined Diseases	0.96%

Total Deaths 1,248.

TABLE SHOWING TOTAL CASES, PERCENTAGES OF GROUPS TO TOTAL CASES TREATED, DEATHS AND PERCENTAGES OF DEATHS TO TOTAL NUMBER OF DEATHS, 1933.

	Cases	Deaths	Percent- age to Cases	Percent- age to Deaths
I. Infectious and Parasitic Diseases ...	191,456	507	35.04	40.63
II. Cancer and other Tumours ... ..	402	45	0.07	3.61
III. Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases ... ..	6,187	8	1.13	0.64
IV. Diseases of the Blood and Blood- forming Organs ... ..	3,766	14	0.69	1.12
V. Chronic Poisoning ... ..	29	—	0.01	—
VI. Diseases of the Nervous and Sense Organs ... ..	48,797	47	8.93	3.77
VII. Diseases of the Circulatory System ...	2,477	26	0.45	2.08
VIII. Diseases of the Respiratory System...	64,464	213	11.80	17.07
IX. Diseases of the Digestive System ...	83,405	104	15.27	8.33
X. Non-venereal Diseases of the Genito- Urinary System and Annexa ...	4,838	52	0.89	4.17
XI. Diseases of Pregnancy, Childbirth and the Puerperal State ... ..	1,088	30	0.20	2.40
XII. Diseases of the Skin and Cellular Tissue ... ..	83,967	40	15.37	3.21
XIII. Diseases of the Bones and Organs of Locomotion... ..	14,614	17	2.67	1.36
XIV. Congenital Malformations ... ..	14	1	—	0.08
XV. Diseases of Early Infancy ... ..	181	4	0.03	0.32
XVI. Old Age ... ..	499	18	0.10	1.44
XVII. Affections produced by External Causes ... ..	37,278	110	6.82	8.81
XVIII. Ill-defined Diseases ... ..	2,899	12	0.53	0.96
Total ...	546,361	1,248	100.00	100.00

NOTE.—Comparative tables for the years 1931 and 1932 are not available as the present table is prepared from the Manual of The International List of Causes of Death 1931 edition. Previously the 1926 edition was used.

### (b) Vital Statistics.

#### (1) GENERAL NATIVE POPULATION.

The most recent estimate of the population of the Territory is computed at 5,022,640. No reliable statistics relating to birth, death and infant mortality rates are available at present.

## (2) GENERAL EUROPEAN POPULATION.

Acknowledgment is made to the Registrar General of Births and Deaths for a return of the registered deaths, a total of fifty three, which are summarized as follows :—

### CAUSES OF DEATHS OF EUROPEANS DURING 1933.

(Classified according to the Manual of the International List of Causes of Deaths, 1931.)

I. Infectious and Parasitic Diseases	...	...	...	...	18
II. Cancer and other Tumours	...	...	...	...	3
III. Diseases of the Circulatory System	...	...	...	...	4
IV. Diseases of the Respiratory System	...	...	...	...	11
V. Diseases of the Digestive System	...	...	...	...	5
VI. Affections produced by External Causes	...	...	...	...	11
VII. Ill-defined Diseases	...	...	...	...	1
Total					53

### EUROPEAN OFFICIALS.

*Deaths.*—There were eight deaths among European officials, five being due to diseases, two to suicide and one to accident.

	1931	1932	1933
Accident—killed while hunting	1	—	—
Accident—gunshot	—	1	—
Accident—overdose of poison	—	—	1
Suicide	1	—	2
Myocardial degeneration	1	—	—
Blackwater fever	1	1	—
Chronic appendicitis	—	1	—
Hæmoptysis	—	—	1
Broncho-Pneumonia	—	—	1
Septicæmia	—	—	1
Acute Oedema of Larynx	—	—	1
Encephalitis lethargica	—	—	1
Total	4	3	8

*Invalidings.*—Four European officials were invalided during the year as compared with nine and six during the two preceding years.

	1931	1932	1933
Tuberculosis	—	2	—
Neurasthenia	3	—	2
Heart disease	1	—	—
Chronic inflammation of maxillary antrum	1	—	—
Eczema	1	—	—
Mediastinal Neoplasm	—	—	1*
Pleurisy	—	—	1
Carcinoma of Oesophagus	1*	—	—
Chronic dysentery	1	—	—
Delusions	1	—	—
Malaria and blackwater	—	1	—
Insomnia	—	1	—
Septicæmia	—	1	—
Auricular fibrillation	—	1	—
Total	9	6	4

\*Subsequently died in England.



## ASIATIC OFFICIALS.

*Deaths.*—There were two deaths among Asiatic officials both due to diseases.

	1931	1932	1933
Blackwater fever ... ..	5	3	—
Pneumonia ... ..	1	—	—
Heart failure ... ..	1	—	1
Chronic interstitial nephritis and mitral endocarditis ... ..	1	—	—
Typhoid ... ..	1	—	—
Tuberculosis (pulmonary) ... ..	1	—	—
Embolism ... ..	—	—	1
Total ...	10	3	2

*Invalidings.*—Six Asiatic officials were invalided during the year.

	1931	1932	1933
Pulmonary tuberculosis ... ..	5	1	1
Chronic asthma ... ..	1	—	—
Chronic bronchitis ... ..	1	—	—
Asthmatic bronchitis ... ..	—	1	—
General debility and premature senility ...	1	1	1
Epilepsy ... ..	1	—	—
Chronic rheumatism ... ..	1	—	—
Gastritis ... ..	1	—	—
Neurasthenia ... ..	2	—	—
Glycosuria and eczema of leg ... ..	1	—	—
Alcoholism ... ..	1	—	—
Chronic dysentery ... ..	1	—	—
Chronic appendicitis ... ..	—	1	—
Blackwater and malaria ... ..	—	1	—
Colic and jaundice ... ..	—	1	—
Mental derangement ... ..	—	1	1
Myopia and chronic trachoma ... ..	—	1	—
Chronic fistula ... ..	—	—	1
Chronic cholecystitis ... ..	—	—	1
Choroidoretinitis ... ..	—	—	1
Total ...	16	8	6

SICK, INVALIDING AND DEATH RATES, EUROPEAN AND ASIATIC OFFICIALS.

	European			Asiatic		
	1931	1932	1933	1931	1932	1933
1. Total number of Officials Resident	1,567	1,387	1,132	2,127	1,653	1,336
2. Average number Resident	988	815	727	1,456	1,166	970
3. Total number on Sick List...	993	685	497	2,733	1,255	700
4. Total number of days on Sick List	6,554	4,639	3,328	11,152	5,974	3,386
5. Average daily number on Sick List	17.96	12.67	9.12	30.55	16.32	9.28
6. Percentage of sick to average number Resident	1.82	1.55	1.25	1.97	1.40	0.96
7. Average number of days on Sick List for each Patient	6.60	6.77	6.70	4.08	4.76	4.84
8. Average sick time to each Resident	6.63	5.69	4.58	7.21	5.12	3.59
9. Total number Invalided	9	6	4	16	8	6
10. Percentage of Invalidings to Total Resident	0.57	0.43	0.35	0.75	0.48	0.45
11. Total Deaths	4	3	8	10	3	2
12. Percentage of Deaths to Total Resident	0.26	0.22	0.71	0.47	0.18	0.16
13. Percentage of Deaths to average number Resident	0.40	0.37	1.10	0.65	0.26	0.21
14. Number of cases of sickness contracted away from Residence	18	18	12	12	5	3



### SECTION III.—HYGIENE AND SANITATION.

#### (A)—GENERAL MEASURES OF SANITATION.

*Drainage and Sewerage.*—The financial situation has prevented the initiation of any part of the schemes for Dar es Salaam and Tanga prepared by the Consulting Engineers.

*Water Supplies.*—Weekly bacteriological examinations of the Dar es Salaam supply have been continued throughout the year and have given most satisfactory results. (Details are given in the Laboratory Report.) Excretal *B. coli* was never found in 25c.c., the largest quantity examined.

Water supply schemes have been formulated for the introduction of modern plant in Moshi, Morogoro and Tabora and for new extensions in Dar es Salaam, Moshi and Morogoro. A scheme has also been drawn up for the installation of a pipe-borne supply in Arusha, intended primarily to provide a supply of pure water for the hospital but capable of serving also the principal residential and commercial areas in the township.

#### (B)—MEASURES TO SPREAD THE KNOWLEDGE OF HYGIENE AND SANITATION.

No revision courses for Urban or District Sanitary Inspectors have been held during the year but systematized instruction in hygiene has been given to the African Dispensers attending the revision course in Dar es Salaam.

The areas of the District Inspectors in the Central, Western, Tanga and Northern provinces have been visited and reported on by two of the more Senior Sanitary Superintendents.

Medical pamphlets and notices on the following subjects have been published and circulated to all authorities concerned with native welfare:—“Malaria” and “Quinine” (in Kiswahili), “Sleeping Sickness” and “Notes on Sleeping Sickness” (in English). The pamphlets “Mafundisho” and “Kulangwa” containing information and instruction on Maternity and Child Welfare have been revised for reissue.

Twenty-five posters in the vernacular, many of which are illustrated, have been similarly distributed throughout the Territory. The subjects dealt with are important diseases of the Territory such as Plague, Smallpox, Sleeping Sickness, Malaria, Ankylostomiasis and Tuberculosis, insect vectors such as ticks, lice, fleas, etc., and several general aspects of hygiene such as cleanliness of the person and environment, housing, water, etc.

#### (C)—SPECIAL RESEARCH UNDERTAKEN WITH THE ASSISTANCE OF THE COLONIAL DEVELOPMENT FUND.

*Tuberculosis.*—This research continued under Dr. Wilcocks who was awarded a Carnegie Grant to enable him to study tuberculosis problems in Europe particularly from the bacteriological aspect. As a result of his investigations in this Territory and of subsequent work in Cardiff and Cambridge, he reports that, subject to the proviso that the whole work should be repeated, he feels justified in basing the following claims on his findings:—

1. There exist in the sputa of a considerable number of natives in Moshi, acid fast bacilli which can easily be mistaken for tubercle bacilli, but which are not pathogenic for guinea pigs, and which have not yet been cultivated.

2. These bacilli frequently exist in the sputa of patients who present physical signs suggestive of pulmonary tuberculosis. They also exist in patients who do not present physical signs, but have so far only been found in patients who have complained of cough for a period of three weeks.

3. The presence of these bacilli constitutes a confusing factor of great importance in the diagnosis of pulmonary tuberculosis. Diagnosis by physical examination is too often indecisive until the disease has progressed so far that treatment is useless, and is therefore not delicate enough either for individual treatment or for the control necessary for the efficient investigation or epidemiological handling of the disease. X-ray diagnosis, long recognized as the most accurate in Europe, is largely impossible in tropical countries. Sputum diagnosis has been accepted as perhaps the most definite of all, and has not infrequently been found to give positive results before physical diagnosis, and almost as soon as X-ray. The presence of these acid fast bacilli, by limiting its value has complicated the matter.

4. If these bacilli are leprosy bacilli, it seems probable that the distribution of leprosy is not fully understood, and constitutes a point of importance in the epidemiology of the disease. If they are acid fasts of some other type, it is not impossible that they may be responsible for some lesions of the lungs, as is almost certainly the case in some of the rare instances in which non-tuberculosis acid fasts have been found in European cases, and the importance of the Moshi bacilli lies not only in the question of their pathogenicity for man, but also in the large proportion of the cases so far examined in which they have been found.

5. There is a possibility that these bacilli are similar to the known acid fast saprophytes (*M. Phlei*, etc.) and have contaminated the mouth from water or food. Against this is the fact that such organisms are usually easily cultivable, whereas the Moshi bacilli are not, and that, among the recent sputa examined, the patients gargled with a saline solution before coughing up the sputum. It is unlikely that the bacilli originated in the gargle water, since in many cases large numbers were found in the sputa concerned, many more than are usually present in water.

*Malaria*.—No Entomologist has yet been appointed to the main unit in Dar es Salaam but the entomological programme is being developed and carried on by the existing staff. The recording of anopheline breeding places and the investigation of glandular and stomach infections of all the local species of anopheles are being studied and the presence of a saline breeding *A. gambiae* practically established. The economic survey of the native population is also nearing completion.

The determination of parasite rates in the native population has been completed and the findings included in a separate report. Experiments have also been concluded in connection with the safe dosage of certain synthetic antimalarial drugs and the results recorded in a special report.

Anopheline control measures hitherto performed by the Health Office were taken over by this unit early in 1933 and have since been carried out as a measure of routine. All the usual methods have been employed, supplemented by an intensive adult catching programme. This latter method has proved to be of outstanding usefulness in the rapid reduction of anophelines

immediately after the cessation of the long rains and is being continued as a routine measure of control.

Surveying of the creeks around Dar es Salaam and preparation of projects and preliminary estimates for improvements to them were continued. A start was made in constructing concrete drains in Gerezani Creek and earthworks erected in Msimbazi Creek to confine the Msimbazi River and the seepage from the banks on the town side to definite channels instead of spreading over the whole valley.

Throughout the township observations have been made at ten-day intervals of the level of sub-soil water within eight feet of the ground surface, to see if any relation exists with anopheline density.

(D)—RECOMMENDATIONS FOR FUTURE WORK.

*Works.*—The putting in hand of some portion of the drainage and sewerage schemes already designed both for foul water and for malaria prevention must not be lost sight of in the general postponement of public works necessitated at the present time of financial shortage. The urgency of the need for such schemes is increasing and it would be unfortunate to be compelled to adopt some uneconomic temporary palliative to meet the present emergencies. The comprehensive schemes will yield a valuable dividend in increased health and comfort of the occupants of the large towns and a consequent financial return in the increased efficiency of the individual.



## ABSTRACTS FROM THE ANNUAL REPORTS OF THE MEDICAL OFFICERS OF HEALTH.

*Dar es Salaam.*—DR. R. NIXON, Medical Officer of Health, assisted by DR. F. V. ADAMS for Port, Infectious Diseases, and Maternity and Child Welfare Services.

The mortality and morbidity rates have been low and the number of malaria cases has shown a marked reduction from that of previous years; the latter is, however, primarily attributable to the exceptionally small rainfall of the year; this factor reduced malaria-incidence but at the same time caused failures of crops and increased malnutrition amongst the native population, particularly that of the out-districts.

The vital statistics of the town (based in all cases on estimated populations) are as follows:—

				European		Asiatic		African
Birth rate	...	...	...	8.0	...	26.8	...	—
Death rate	...	...	...	5.3	...	10.1	...	17.2

(The proportion of African births notified is too small to admit of a rate being based on these returns.)

Structural works in Gerezani and Msimbazi creeks carried out by the Malaria unit, and already described, eliminated certain long-standing anopheline breeding-places but the extraordinary character of the rainfall makes it difficult to draw accurate deductions of the effect of these works on local malaria-incidence. A record of sub-soil water levels (in relation to anopheline density) and a determination of native malaria-parasite rates has also been put in hand by this unit.

The economic situation has shown little material improvement and the trading classes are still embarrassed while hawking has continued to an undesirable extent.

Two hundred and fifty-seven samples of various foodstuffs were taken for analysis and 228 lots of foodstuffs were destroyed as unsound. Only three of 243 samples of milk failed to comply with legal standards for fat and non-fatty solids. During the last few years many hundreds of samples of local milk have been analysed and a summary of the figures shows that the fat content averages 4.5 per cent. (i.e. 50 per cent. higher than the legal standard required in this and most other countries) while the percentage of non-fatty solids conforms closely to the legal standard of 8.5 per cent. While the chemical quality of the local milk is good, the methods of cow-keeping and milking practised are still in many cases primitive and insanitary and it is considered necessary for all local milk to be boiled before use. A model dairy farm which supplies the government hospitals is maintained within the township area by the Government Veterinary Department and is available to demonstrate correct methods to the private owner.

Nine hundred and fourteen premises (shops, factories, hotels, etc.) were inspected by the staff of the Health Department prior to their licensing or relicensing.

Structural improvements have been effected to the New Market and to the Beer Market.

The demolition of many of the houses remaining on the Open Space has been carried out during 1933 and further clearing is proceeding. After

reserving adequate areas for native play, the remainder of the space has been offered on a five-year tenancy to non-native sports clubs. All the plots offered were accepted but some of the clubs subsequently returned their allocations on the grounds that their funds did not permit of them carrying out the necessary levelling operation. The clearing and levelling of the occupied areas will be an asset both to the clubs and to the township.

It has become necessary to consider the provision of new cemeteries for the township. Land adjacent to the existing native cemetery in Kichwele Street is being surveyed and will be enclosed for this purpose. Land in the vicinity of the European Cemetery cannot, however, be utilized, part being private property and part too low-lying to be satisfactory. A new site has therefore, been selected north-west of Selander Bridge.

The bay in the township boundary at Ilala has been eliminated by a readjustment of the boundary line and it has been possible in consequence to insist that the trading premises in the former bay be now brought up to township standards.

The Port Health staff visited 536 ships and 866 dhows. The Standard Quarantine Message system has been carried on throughout the year and a memorandum has been drawn up by the Port Health Officer on the results of its working in Dar es Salaam.

There were 20,694 rats destroyed in Dar es Salaam during the year : 7,296 of these were examined at the Laboratory and found to consist of 7,272 *Rattus rattus* and 24 *Rattus norwegiens* (5,031 mice were also examined). Of the 7,272 *Rattus rattus*, spleen smears from 2,962 were examined and all found negative. No plague-infected rat has been found in Dar es Salaam during the period 1919-1933.

*Maternity and Child Welfare.*—There has been an increase in all branches of this work, which has been continued in the main clinic at Bagamoyo Street and in subsidiary clinics at the school, police lines and King's African Rifles lines. Admissions to the main clinic were 260, of which 171 were women : 414 ante-natal examinations and 86 confinements were conducted. In all 2,975 new cases women and 5,853 children attended and the total attendances numbered 10,150 women and 28,536 children.

*Tanga.*—DR. A. I. MEEK, Medical Officer of Health.

None of the major infectious diseases occurred in epidemic form but a few cases of influenza of a mild type were recorded in town and out-districts during the last quarter.

The number of malaria cases treated at Tanga Hospital was the lowest recorded for five years. As at Dar es Salam, this is ascribed primarily to the exceptionally low rainfall. The same cause produced crop failures with consequent distress and malnutrition in parts of the district.

An increase in the cases of pulmonary tuberculosis treated is recorded but is attributed largely to improved diagnostic measures.

The vital statistics of Tanga Township (based on estimated populations) are as follows :—

			European		Asiatic		African
Birth rate (per 1,000)	...	...	42	...	—	...	—
Death rate	„	...	17	...	12	...	20

The small proportion of non-European births notified renders the recorded birth rates of little value.



In 117,823 inspections of premises, 3,638 collections of mosquito larvæ were found; of these 1,438 were aedes (39·5 per cent. of the whole) and 113 anopheline (0·4 per cent.).

Of 8,452 vaccinations performed, 72 per cent. of the primary cases reinspected were found successful.

Four hundred and seventeen steamers and 472 dhows were cleared during the year.

Meat inspection (at the slaughter house) and milk inspection (at the Health Office) were carried out daily: 6,267 animals were inspected and 3,146 portions of carcasses were condemned: 68,781 bottles of milk were inspected.

The number of new cases attending the Maternity and Child Welfare Clinic increased from 2,095 (in 1932) to 5,812 and the number of confinements admitted from 42 to 87.

The clinic building was unfortunately destroyed by floods in February and it was necessary to rent private premises for the remainder of the year: It is hoped that a new and better building will be erected in 1934.

*Lake Province.*—DR. J. M. CAMPBELL, Medical Officer of Health, Mwanza.

Attention is again drawn to the fallacies in estimating the prevalence of communicable diseases from the numbers of cases treated in hospitals. Only a small proportion of sufferers go to hospitals and the attendances give only a qualitative and not a quantitative indication of prevailing diseases. In many instances an infection is discovered because the patient is in hospital suffering from some other condition, e.g. cases of hernia, malignant disease, broken limbs, etc., are often proved during the routine hospital examination to have ankylostomiasis, malaria, bilharzia, tapeworm or some other infection, either singly or in combination. But, though hospital records do not show accurately the comparative prevalence of endemic diseases in different years, they do indicate which are the endemic diseases. In the Lake Province the important debilitating endemic diseases are venereal diseases, yaws, ankylostomiasis, malaria, bilharzia, helminthic disease, relapsing fever, elephantiasis, leprosy and tuberculosis. These diseases are not equally prevalent throughout the province.

The population of Mwanza Town is too small for the death rates or birth rates to be of much comparative value; the African death rate for the town was 40.

The birth rate is not recorded as only a small proportion of the births are notified. The most important causes of death were pneumonia, broncho-pneumonia, tuberculosis, ankylostomiasis and malaria.

No locality in the province has been found free from malaria. An interesting investigation, carried out on small samples of the populations of the two islands of Ukerewe and Ukara, which are only a few hours by canoe distant from each other, indicated that the incidence of malaria and ankylostomiasis on the two islands was quite different. In Ukerewe 15 per cent. of those examined had palpable spleens and 30 per cent. showed malaria parasites: On Ukara, the figures were 54 per cent. and 62 per cent. respectively. In Ukerewe, the hæmoglobin percentage was below 70 in 44 per cent. of cases; in Ukara, in only 20 per cent. Ankylostomiasis was found to be common on Ukerewe and rare on Ukara.

Relapsing fever is considered to be endemic throughout the province and the importance of training a proportion of Tribal Dressers in microscopy is stressed in this regard.



Sufficient cases of leprosy were seen to indicate that this disease presents a serious problem. The writer doubts the value of voluntary colonies in checking the spread of this disease.

The prevalence of bilharzia in the out-districts is partly attributed to the native habit of bathing in the adventitious ponds and large pools forming after the rains. Diminution of the incidence of this disease is largely dependent on the spread of the knowledge of its ætiology.

The education of the rural African is receiving valuable assistance from the Agricultural Department's experimental farms and from the settlement of areas reclaimed from tsetse.

Monthly courses in practical sanitation for Tribal Dressers were conducted during the year. An immediate result has been a great increase in the numbers of vaccinations carried out: 53,565 were performed during the year and 77 per cent. of the primary cases reinspected were found successful.

At Mwanza 99 steamers and 1,894 dhows were cleared during the year.

Anti-mosquito work in the township was continued throughout the year and 3,461 collections of mosquito larvæ were found; of these 10·6 per cent. were aedes and 33·6 anopheles.

*Northern Province.*—DR. B. O. WILKIN, Medical Officer of Health, Moshi.

Replacement by prison labour of some of the hired gangs in Moshi Township together with the temporary posting of a European Sanitary Superintendent have enabled the staff of the Health Department to carry out three important pieces of work long overdue. These were the examination of huts in Moshi township built outside the demarcated native area, malaria surveys at Usa River and at Moshi and a careful examination of the most overcrowded block in Moshi Town.

Uncontrolled building of native huts has been practised for several years in the Njoro area and is now proving difficult to check. A malarial survey carried out in co-operation with the Malaria Research Unit of Tanga showed a high rate of malarial infection and also the existence of serious offences against public health and amenities. The early zoning of the township into defined building areas is an essential preliminary to the control of this section.

The first survey of Usa River indicated that a successful anti-malaria scheme for the area would probably require expensive works and the co-operation of the local planters as most of the land is privately owned. It is recommended that the Malaria Research Officer and the Malaria Engineer should report on the problem before further work is put in hand and that an early opportunity should be taken to deliver a lecture or lectures on malaria to the local land-owners. The survey in Moshi showed a heavy malaria infection-rate in the areas of Njoro Juu and Njoro Chini.

The detailed examination of the "bazaar" area of Moshi township showed that the plots are small and overbuilt and that the numerous latrine and waste-water pits give rise to many nuisances, the rocky nature of the ground allowing little absorption. It is recommended that the plots should be increased in size whenever possible and that improved drainage facilities be provided.

Three cases of bubonic plague with one death occurred near Mbulu.

Enteric is prevalent in all districts and cases have occurred amongst Europeans in both Moshi and Arusha. Representations have been made of the need for the installation of a pipe-borne supply of pure water to Arusha township and of an extension of the Moshi supply and it is hoped these works will be put in hand during the coming year.

Ankylostomiasis, taeniasis and schistosomiasis are prevalent and in this connection the importance of increasing the number of African District Sanitary Inspectors is stressed.

Vaccination has been carried out in certain areas including Masailand for the first time in recent years: 9,217 vaccinations were performed by the district inspectorate.

The Health Officer has paid routine visits to Moshi School and has carried out medical inspection of all the scholars attending during the latter half of the year.

Steps have been taken to spread the knowledge of hygiene by exhibition of health posters, by instruction of African District Sanitary Inspectors and Tribal Dressers and by talks to planters and to native chiefs.

\* \* \* \* \*

### CONFERENCE AT ZANZIBAR.

A meeting of Health officers of Kenya, Zanzibar and Tanganyika Territory was held at Zanzibar in October to consider the adoption of a common port health procedure for the three territories. It was decided that a memorandum should be drawn up embodying an approved common procedure and suitable for distribution to masters and agents and that this memorandum should be submitted to the Governments concerned for their consideration. Tanganyika Territory was represented at the meeting by Dr. R. R. Scott, Deputy Director of Sanitary Service, and Dr. F. V. Adams, Port Health Officer of Dar es Salaam.

### PREVENTION OF YELLOW FEVER.

As a result of the part taken by this Government in the League of Nations Health Conference at Cape Town at the end of 1932 the department undertook, with the kind co-operation of the Rockefeller Foundation, a survey in parts of the Territory for the purpose of ascertaining whether any areas showed evidence of previous infection with yellow fever, as indicated by the Protection Test. Dr. Skan, of the Laboratory staff, was charged with the collection of the samples from different stations and he collected in January and February altogether 158 samples of blood serum from the following stations named in the table below. The sera with one exception were taken from Africans and endeavour was made to secure donors who had spent the whole of their lives in the area in which they resided.

Province	Station	No. of sera	Donors
Central	Mpwapwa ... ..	28	Mainly employees of government departments and mission natives.
Lake	Mwanza ... ..	25	Government employees and prisoners
	Tinde (Shinyanga District)	26	Laboratory workers and local natives
Western	Itetemia (Tabora District)	25	Local natives
	Kigoma (terminal port of central railway on Lake Tanganyika and in close touch by steamer and dhow with Belgian Congo)	28	Local natives
Eastern	Dar es Salaam ... ..	26	Employees of Medical Department
	Total ...	158	



One European official who had sustained an attack of fever with jaundice while serving in Lagos, Nigeria, kindly volunteered to undergo the test.

A total of 159 ampoules of serum were thus collected from six widely separated parts of the Territory ; and these were forwarded under refrigeration to the Rockefeller Foundation at New York through the kindness of Dr. G. M. Findlay of the Wellcome Research Institute in London, whose co-operation in connection with the survey is gratefully acknowledged.

Of the 146 sera which arrived in good condition and were satisfactorily tested only one from Mwanza indicated the possession of immunity from Yellow Fever and "the result was definitely protection." This donor was followed up and a further specimen of his serum taken in August. He affirmed that he had been born near Smith Sound in Mwanza District and had never been out of the district at any time of his life. The new sample showed no protection power whatever, although only seven months had elapsed between the positive and negative findings. No explanation of this interesting case is yet possible.

The single European serum showed no protection and it is therefore highly improbable that his illness in Nigeria was due to yellow fever.

As a result of examinations of sera collected in the western part of Uganda whence several positive specimens were obtained, and of the suspicion aroused by the positive protection test obtained at the first test of the serum from the donor at Mwanza, another batch of 25 sera from the Mwanza and 24 from the Bukoba districts of the Lake Province were dispatched to New York for further test. Out of the 49 received one was found toxic for mice and the remaining 48 were satisfactorily tested and the result proved to be negative.

A paper "The Yellow Fever problem as it affects Tanganyika Territory together with Notes on recent Literature on Yellow Fever" has been circulated to all medical stations and other interested persons in the Territory.

In connection with the question of trans-African aerial traffic, it was decided that Tabora should be the first port for the landing of such traffic within the Territory and legal provision for this was made under the Air Navigation Directions. Power was also taken to require that pilot, crew and passengers on any aircraft arriving from an area infected with yellow fever be immunized against that disease.

Information on the general subject was also contributed to the Press for the information of the public.

Arrangements were made for the Medical officers responsible for townships where effective mosquito control is undertaken to furnish an Aedes Index and the following is a summary of the results during the year :—

AEDES INDEX FOR 1933.

	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Arusha ...	.63	Nil	Nil	.90	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Bukoba	.17	Nil	.33	.23	Nil	Nil	.70	Nil	.06	.23	.28	.12
Dar es Salaam (whole town excluding dhows)	8.30	13.80	10.74	11.65	9.90	9.20	8.14	4.29	3.93	4.63	4.87	3.80
Dar es Salaam Zone I (Residential)	4.50	7.90	10.20	13.12	9.41	5.02	5.85	3.50	2.86	3.12	2.36	2.66
Dar es Salaam Zone II (Commercial)	3.40	3.00	4.30	7.41	6.72	4.11	3.78	1.74	1.42	.97	1.42	1.58
Dar es Salaam Zone III (Native Quarter)	14.00	26.90	13.60	12.69	11.95	14.20	11.25	5.72	5.41	6.93	7.16	5.67
Dar es Salaam, Dhows.	21.30	16.50	16.01	23.50	19.11	15.08	10.44	16.32	4.06	13.56	13.08	12.94
Dodoma	15.50	24.00	20.00	12.00	Nil	1.37	1.08	Nil	1.59	.36	Nil	.13
Kigoma	2.10	1.80	.96	.22	1.10	.32	Nil	Nil	Nil	1.17	1.33	1.66
Kigoma (on ships)	12.00	8.30	2.90	Nil	8.20	9.00	Nil	Nil	Nil	6.00	17.86	Nil
Kilosa ...	4.80	3.30	5.50	4.10	7.90	2.04	3.60	5.20	3.60	3.30	5.50	3.70
Lindi ...	3.70	4.00	4.06	1.70	2.70	2.33	1.98	1.86	1.73	1.65	2.47	2.45
Note:—"Nil" October Morogoro	.21	.05	.03	.02	.03	.04	.03	.21	.01	Nil	Nil	.01
Moshi ...	Nil	.13	.38	.59	.60	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Mwanza	.20	.40	.40	.50	.70	.60	.20	.10	.40	.50	.60	.60
Songea	19.00	8.00	5.10	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil
Tabora ...	.73	1.08	1.30	Nil	.65	.09	.03	Nil	.28	.29	.45	.50
Tanga ...	1.20	1.20	.87	.66	.96	1.35	1.20	1.36	.90	.70	.68	.60

TABLE SHOWING INCIDENCE OF TUBERCULOSIS AT THE VARIOUS STATIONS  
IN THE TERRITORY DURING 1931, 1932 AND 1933.

Stations	1931				1932				1933			
	Pulmonary		All other forms		Pulmonary		All other forms		Pulmonary		All other forms	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Arusha ... ..	9	2	6	2	13	3	5	—	33	4	9	—
Bagamoyo ... ..	4	1	—	—	4	—	—	—	13	—	—	—
„ District work	2	—	2	—	2	—	—	—	—	—	—	—
Biharamulo ... ..	5	—	1	—	—	—	—	—	4	2	1	—
Bukoba ... ..	21	—	10	—	22	1	3	—	36	3	2	—
Dar es Salaam:												
European Hospital ...	2	—	1	—	5	1	2	1	3	—	—	—
Sewa Hadji Hospital	19	3	8	1	38	—	10	3	53	1	7	2
Health Office* ...	13	—	—	—	10	—	—	—	58	24	—	—
Private Practitioners*	3	—	—	—	7	—	—	—	5	—	—	—
Dodoma ... ..	9	3	1	—	8	—	1	—	5	—	2	—
Handeni ... ..	—	—	1	—	4	—	—	—	—	—	—	—
Iringa ... ..	2	—	2	—	9	3	3	—	7	2	5	—
Kahama ... ..	5	—	—	—	11	—	—	—	12	1	1	—
Kasulo ... ..	3	1	1	—	1	—	—	—	—	—	—	—
Kibondo ... ..	1	—	—	—	1	—	—	—	—	—	—	—
Kigoma ... ..	3	2	—	—	11	4	—	—	5	1	1	1
Kilosa ... ..	3	1	1	1	3	1	1	—	5	2	1	—
Kilwa ... ..	21	—	9	—	24	—	—	—	5	—	7	—
Kondoa ... ..	2	—	11	—	3	—	—	—	2	—	1	—
Korogwe ... ..	—	—	—	—	81	—	10	—	9	—	1	—
Lindi ... ..	4	3	2	2	11	2	—	—	20	1	1	—
Liwale ... ..	—	—	—	—	1	1	—	—	—	—	—	—
Lushoto ... ..	25	—	7	1	16	2	6	—	23	3	12	—
Mafia ... ..	8	—	—	—	4	1	—	—	—	—	—	—
Mahenge ... ..	2	1	1	—	3	—	1	—	5	—	—	—
„ District work*	82	—	—	—	—	—	—	—	—	—	—	—
Malangali ... ..	1	—	—	—	—	—	—	—	7	—	1	—
Manyoni ... ..	1	—	—	—	2	1	—	—	—	—	—	—
Maswa ... ..	—	—	—	—	—	—	—	—	1	—	—	—
Mbeya ... ..	—	—	1	—	1	—	1	—	11	—	10	—
Mbulu ... ..	5	2	3	—	7	2	2	—	12	1	20	—
Mikindani ... ..	6	—	3	—	3	—	2	—	12	—	—	—
Mkalama ... ..	5	—	11	—	1	—	—	—	7	1	1	—
Morogoro ... ..	9	2	—	—	7	2	2	—	22	6	1	—
Moshi... ..	210	2	14	—	86	5	16	2	88	6	15	—
„ Kibongoto ... ..	65	8	77	2	83	6	48	1	90	6	107	2
„ District work*	67	—	238	—	113	—	377	—	326	—	419	—
„ Usangi ... ..	143	1	73	—	150	13	100	—	153	—	102	1
Mpwapwa ... ..	—	—	—	—	—	—	2	—	2	—	—	—
Musoma ... ..	4	1	14	—	1	—	3	—	4	1	4	1
Mwanza ... ..	25	1	6	2	13	—	7	3	19	4	10	—
„ Health Office...	—	—	—	—	—	—	—	—	29	4	—	—
Mwaya ... ..	—	—	—	—	1	1	—	—	2	—	15	—
Nzega ... ..	4	1	6	—	1	—	—	—	11	2	—	—
Pangani ... ..	11	4	1	—	12	2	2	2	30	5	11	2
Shanwa ... ..	—	—	1	—	—	—	4	—	6	2	—	—
Shinyanga ... ..	1	—	—	—	2	1	—	—	1	—	—	—
Singida ... ..	4	2	—	—	2	—	1	—	13	2	—	—
Songea ... ..	5	—	13	1	4	—	7	—	7	—	7	2
Sumbawanga ... ..	3	—	—	—	—	—	—	—	8	—	1	—
Tabora ... ..	14	5	7	—	20	4	3	3	8	4	4	1
Tanga ... ..	83	6	24	—	77	6	10	3	88	7	24	2
„ Health Office...	—	—	—	—	—	—	—	—	56	25	—	—
Tukuyu ... ..	11	1	6	—	11	2	3	—	18	—	19	—
Tunduru ... ..	1	—	3	—	—	—	—	—	—	—	—	—
Utete ... ..	1	—	—	—	3	1	2	—	7	1	3	—
„ District work*	—	—	—	—	—	—	—	—	3	—	—	—
Total ... ..	927	53	565	12	892	65	634	18	1,344	121	825	14

\*Not included in Tables IV and V.



## MENTAL HOSPITALS.

### I.—DODOMA MENTAL HOSPITAL.

*Numbers:*

				Males	Females	Total
In hospital 1st January, 1933	...	...	...	66	30	96
Admitted during year	...	...	...	28	10	38
Discharged during year	...	...	...	23	—	23
Died during year	...	...	...	14	6	20
In hospital 31st December, 1933	...	...	...	57	34	91

*Classification of Admissions:*

Mania	...	...	...	...	...	13
Delusional Insanity	...	...	...	...	...	11
Imbecility	...	...	...	...	...	8
Dementia and Senility	...	...	...	...	...	6

*Discharges:*

Discharged by Board of Visitors	...	...	...	...	...	23
---------------------------------	-----	-----	-----	-----	-----	----

(One of the above was subsequently readmitted.)

*Deaths:*—Deaths were due to the following causes superimposed on the condition for which the patient was admitted to the hospital:—

Diarrhœa	...	...	...	...	...	7
Heart failure	...	...	...	...	...	1
Liver abscess	...	...	...	...	...	1
Pulmonary tuberculosis	...	...	...	...	...	2
Helminthiasis	...	...	...	...	...	2
Mania	...	...	...	...	...	2
Dysentery	...	...	...	...	...	1
Debility	...	...	...	...	...	2
Senility	...	...	...	...	...	2

*Inspections:*

The hospital was inspected and all patients seen by:						Visits.
The Board of Visitors	...	...	...	...	...	12
The Senior Medical Officer, Dodoma	...	...	...	...	...	48
Other Government Officials	...	...	...	...	...	11

### II.—LUTINDI MENTAL HOSPITAL.

*Numbers:*

				Males	Females	Total
In hospital 1st January, 1933	...	...	...	83	34	117
Admitted during year	...	...	...	13	7	20
Discharged during year	...	...	...	11	2	13
Died during year	...	...	...	20	4	24
In hospital 31st December, 1933	...	...	...	65	35	100

*Classification of Admissions:*

Mania	...	...	...	...	...	7
Paralysis...	...	...	...	...	...	3
Dementia	...	...	...	...	...	2
Imbecility	...	...	...	...	...	1
Epileptic Insanity	...	...	...	...	...	1
Delusional Insanity	...	...	...	...	...	6



II.—LUTINDI MENTAL HOSPITAL.—(contd).

*Discharges :*

Discharged by Board of Visitors as recovered	...	...	...	13
--	-----	-----	-----	----

*Deaths :*

Phthisis	...	...	...	...	...	...	...	...	5
Exhaustion	...	...	...	...	...	...	...	...	3
Paralysis	...	...	...	...	...	...	...	...	3
Intestinal disease	...	...	...	...	...	...	...	...	3
Apoplexy	...	...	...	...	...	...	...	...	2
Dysentery	...	...	...	...	...	...	...	...	2
Senile decay	...	...	...	...	...	...	...	...	2
Epilepsy	...	...	...	...	...	...	...	...	2
Weakness	...	...	...	...	...	...	...	...	1
Liver cancer	...	...	...	...	...	...	...	...	1

*Inspections :*

								Visits.
The Senior Medical Officer, Tanga	...	...	...	...	...	...	...	1
The Medical Officer, Lushoto ...	...	...	...	...	...	...	...	1
The District Officer, Lushoto ...	...	...	...	...	...	...	...	2
Dr. Muller of Bumbuli Mission	...	...	...	...	...	...	...	7

# RAINFALL.

## TOTAL RAINFALL IN MILLIMETRES BY STATIONS.

Districts				Stations			Feet above sea level	Rainfall in Millimetres
CENTRAL LINE AREA :								
	Dar es Salaam	...	...	Dar es Salaam	...		S.L.	708.0
	Morogoro	...	...	Morogoro	...		1,628	564.5
				Kilosa	...		1,606	1,085.1
	Dodoma	...	...	Dodoma	...		3,700	595.7
				Manyoni	...		4,096	472.9
				Singida	...		5,233	609.1
				Mpwapwa	...		3,280	553.6
	Tabora	...	...	Tabora	...		4,232	767.6
				Kahama	...		4,000	849.1
				Nzega	...		4,000	716.5
	Kigoma	...	...	Kigoma	...		2,531	742.2
				Kasulu	...		4,530	649.5
				Kibondo	...		4,981	1,006.3
COASTAL AREA, SOUTH :								
	Lindi	...	...	Lindi	...		S.L.	756.4
				Tunduru	...		2,300	973.3
				Masasi Mission	...		1,500	901.7
				Mikindani	...		1,016	671.8
	Kilwa	...	...	Kilwa	...		S.L.	780.2
				Liwale	...		1,500	900.8
	Rufiji	...	...	Utete	...		170	811.3
COASTAL AREA, NORTH :								
	Tanga	...	...	Tanga	...		S.L.	1,047.2
				Amani	...		2,834	1,658.7
NORTHERN HINTERLAND :								
	Moshi	...	...	Moshi	...		2,649	531.1
	Arusha	...	...	Arusha	...		4,416	908.1
				Mbulu	...		5,715	599.6
	Mwanza	...	...	Mwanza	...		3,709	1,238.3
				Musoma	...		3,709	550.2
	Bukoba	...	...	Bukoba	...		3,709	1,795.2
				Biharamulo	...		4,850	721.8
	Kondoa	...	...	Kondoa Irangi	...		4,600	524.0
				Mkalama	...		4,235	610.5
SOUTHERN HINTERLAND :								
	Iringa	...	...	Iringa	...		5,365	542.6
				Njombe	...		6,400	1,007.2
	Ufipa	...	...	Sumbawanga	...		5,650	892.4
				Rungwa	...		2,950	922.4
	Mbeya	...	...	Mbeya	...		4,921	914.1
	Rungwe	...	...	Tukuyu	...		5,300	1,752.3
	Songea	...	...	Songea	...		3,826	1,359.7

## DENTAL TREATMENT.

The following work for officials, their wives and families was performed by the Senior Dental Surgeon, Dar es Salaam, and the Dental Surgeon, Tanga, during the year :—

Attendances	...	...	...	...	...	2,821
Fillings	...	...	...	...	...	1,158
Extractions	...	...	...	...	...	585
Pulp treatment	...	...	...	...	...	93
Scaling	...	...	...	...	...	264
Radiograms taken	...	...	...	...	...	210
Dentures made	...	...	...	...	...	100
Repairs to dentures	...	...	...	...	...	83

A number of the African population and some of the native school children also received treatment.

## TABLE II.—FINANCIAL.

FROM 1ST JANUARY TO 31ST DECEMBER, 1933.

Details of Expenditure					Approved Estimates	Actual Expenditure
					£	£
<i>Expenditure :</i>						
Personal Emoluments	...	...	...	...	126,387	121,422
<i>Other Charges :</i>						
Outfit Allowances	...	...	...	...	90	60
Upkeep of Hospitals...	...	...	...	...	13,000	10,248
Upkeep of Quarantine and Infectious Diseases Hospitals	...	...	...	...	600	467
Tuberculosis Scheme (Kilimanjaro)	...	...	...	...	825	685
Upkeep of Laboratory, Dar es Salaam	...	...	...	...	100	55
Upkeep of Lymph Laboratory, Mpwapa	...	...	...	...	250	184
Maintenance of Leprosy Patients	...	...	...	...	2,925	2,789
Maintenance of Mental Patients and Hospitals	...	...	...	...	1,500	1,290
Epidemic Outbreaks and Special Sanitary Measures	...	...	...	...	300	212
Sleeping Sickness Measures	...	...	...	...	6,000	7,740
Venereal Diseases and Yaws	...	...	...	...	50	—
Maternity and Child Welfare	...	...	...	...	2,000	1,605
Sanitary Labour	...	...	...	...	8,725	7,192
Sanitary Equipment...	...	...	...	...	750	674
Sanitary Oils and Disinfectants	...	...	...	...	350	288
Medical and Surgical Stores	...	...	...	...	15,000	9,533
Quinine for Public Purchase at Post Offices	...	...	...	...	1,100	901
Equipment and Furniture	...	...	...	...	4,000	2,914
Microscopes and Accessories	...	...	...	...	250	123
Vaccines and Serum	...	...	...	...	300	234
Books of Reference	...	...	...	...	50	37
Periodicals	...	...	...	...	120	106
Electricity and Water	...	...	...	...	3,050	2,312
Travelling Allowances	...	...	...	...	100	67
Transport Allowances	...	...	...	...	3,075	2,621
Transport	...	...	...	...	3,000	1,912
Railway Fares and Freight	...	...	...	...	4,500	5,556



TABLE II.—FINANCIAL.—(contd.)

Details of Expenditure						Approved Estimates	Actual Expenditure
						£	£
Passages	...	...	...	...	...	7,935	5,748
Tents and Camp Equipment	...	...	...	...	...	150	110
Uniforms	...	...	...	...	...	725	401
Typewriters	...	...	...	...	...	75	78
Allowances to Medical Officers for Dental work	...	...	...	...	...	75	28
Fees, etc., of Medical Officers attending Courses of Instructions	...	...	...	...	...	300	149
Medical Attendance Outside the Territory	...	...	...	...	...	300	295
Contribution to Tropical Diseases Research Fund	...	...	...	...	...	149	149
Contribution to Bureau of Hygiene and Tropical Diseases	...	...	...	...	...	200	200
Contribution to Tropical Diseases Hospital	...	...	...	...	...	20	20
Contribution to Advisory Medical and Sanitary Committee for Tropical Africa	...	...	...	...	...	75	—
Pauper Burials	...	...	...	...	...	7	4
Upkeep of Quarantine Station, Zanzibar	...	...	...	...	...	960	941
Upkeep of Motor Boats	...	...	...	...	...	300	253
Upkeep and Maintenance of Motor Vehicles	...	...	...	...	...	560	478
Stationery	...	...	...	...	...	286	282
Mass Treatment on Ankylostomiasis	...	...	...	...	...	25	—
Contingencies	...	...	...	...	...	120	62
Post-mortem Fees	...	...	...	...	...	—	49
Grants to Private Practitioners	...	...	...	...	...	—	84
Purchase of Motor Vehicle for Medical Officer, Kibongoto	...	...	...	...	...	—	167
TOTAL OTHER CHARGES						84,272	69,303
PERSONAL EMOLUMENTS						126,387	121,422
TOTAL						£210,659	£190,725

## Details of Revenue

<i>Revenue:</i>						£
From Hospital Fees, Sale of Drugs, etc.	...	...	...	...	...	6,079
Fees collected by Marine and Customs Departments for Bills of Health	...	...	...	...	...	1,053
Sale of Vaccine Lymph	...	...	...	...	...	105
Fees for Mechanical Dental Work	...	...	...	...	...	530
TOTAL						7,767
Reimbursements by Tanganyika Railways for Medical Service	...	...	...	...	...	3,838
TOTAL						£11,605

TABLES IV AND V.

EUROPEANS (OFFICIAL AND NON-OFFICIAL).

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES			In-Patients						Out-Patients			Total Cases In- and Out-Patients
			Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total		
				Admis- sions	Deaths							
I.—Infectious and Parasitic Diseases.												
1. Typhoid fever	...	...	...	4	...	5	1	...	...	...	5	...
2. Paratyphoid fevers:	...	...	...	...	...	...	...	...	...	...	...	...
(a) Paratyphoid A	...	...	...	1	...	1	...	...	...	...	...	...
(b) Paratyphoid B	...	...	...	...	...	...	...	...	...	...	...	...
3. Typhus fever ...	...	...	...	14	...	15	...	...	...	...	1	...
4. Relapsing fever	...	...	...	...	...	...	...	...	...	...	...	...
5. Undulant fever	...	...	...	...	...	...	...	...	...	...	...	...
6. Smallpox	...	...	...	4	...	4	...	...	...	...	...	...
7. Measles	...	...	...	...	...	...	...	...	...	...	...	...
8. Scarlet fever ...	...	...	...	3	...	3	...	...	...	...	...	...
9. Whooping cough	...	...	...	...	...	...	...	...	...	...	...	...
10. Diphtheria	...	...	...	98	...	98	...	...	...	...	...	...
11. Influenza	...	...	...	...	...	...	...	...	...	...	...	...
12. Cholera	...	...	...	...	...	...	...	...	...	...	...	...
13. Dysentery:	...	...	...	...	...	...	...	...	...	...	...	...
(a) Amoebic	...	...	...	12	...	12	...	...	...	...	...	...
(b) Bacillary	...	...	...	3	...	3	...	...	...	...	...	...
(c) Other or unspecified	...	...	...	1	...	1	...	...	...	...	...	...
14. Plague:	...	...	...	...	...	...	...	...	...	...	...	...
(a) Bubonic	...	...	...	...	...	...	...	...	...	...	...	...
(b) Pneumonic	...	...	...	...	...	...	...	...	...	...	...	...
(c) Septicæmic	...	...	...	...	...	...	...	...	...	...	...	...
(d) Not otherwise defined	...	...	...	4	...	4	...	...	...	...	2	...
15. Erysipelas	...	...	...	...	...	...	...	...	...	...	...	...
16. Acute poliomyelitis	...	...	...	1	...	1	...	...	...	...	...	...
17. Encephalitis lethargica	...	...	...	...	...	...	...	...	...	...	...	...
18. Cerebro-spinal fever	...	...	...	...	...	...	...	...	...	...	...	...
19. Glanders	...	...	...	...	...	...	...	...	...	...	...	...
20. Anthrax	...	...	...	...	...	...	...	...	...	...	...	...
21. Rabies...	...	...	...	...	...	...	...	...	...	...	...	...
22. Tetanus	...	...	...	...	...	...	...	...	...	...	...	...
23. Tuberculosis of the respiratory system	...	...	...	5	1	6	...	5	1	...	6	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
24. Tuberculosis of the central nervous system	...	...	...	...	...	...	...	...	...
25. Tuberculosis of intestines and peritoneum	...	...	...	...	...	...	...	...	...
26. Tuberculosis of vertebral column ...	...	...	...	...	...	...	...	...	...
27. Tuberculosis of other bones and joints ...	...	...	...	...	...	...	...	...	...
28. Tuberculosis of skin and subcutaneous tissues ...	...	...	...	...	...	...	...	...	...
29. Tuberculosis of lymphatic system (abdominal and bronchial glands excepted) ...	...	...	...	...	...	...	...	...	...
30. Tuberculosis of genito-urinary system	...	...	...	...	...	1	...	1	1
31. Tuberculosis of other organs	...	...	...	...	...	...	...	...	...
32. Disseminated tuberculosis:									
(a) Acute ...	...	...	...	...	...	...	...	...	...
(b) Chronic	...	...	...	...	...	...	...	...	...
(c) Not distinguished as acute or chronic	...	...	...	...	...	...	...	...	...
33. Leprosy	...	...	...	...	...	...	...	...	...
34. Syphilis:									
(a) Congenital	...	...	...	...	...	2	...	2	2
(b) Acquired	...	...	...	...	...	1	...	1	1
1. Primary ...	...	...	...	...	...	5	...	5	5
2. Secondary	...	...	...	...	...	1	...	1	1
3. Tertiary ...	...	...	...	...	...	2	...	2	2
4. Unspecified	...	...	...	...	...	...	...	...	...
35. Other venereal diseases:									
1. Gonorrhoeal or purulent ophthalmia	...	...	...	...	...	1	...	1	1
2. Other diseases included under 35	...	...	...	...	...	...	...	...	...
Gonorrhoea	...	5	...	5	...	17	...	17	22
Soft Chancre	...	...	...	...	...	...	...	...	...
36. Purulent infection, septicaemia	...	...	...	...	...	...	...	...	...
(a) Septicaemia	...	1	...	1	...	...	...	...	1
(b) Pyaemia	...	1	...	1	...	...	...	...	1
(c) Gas gangrene	...	...	...	...	...	...	...	...	...
37. Yellow fever ...	...	...	...	...	...	...	...	...	...
38. Malaria:									
Tertian	...	16	...	16	...	5	3	8	24
Quartan	...	1	...	1	...	...	...	...	1
Subtertian	...	367	1	368	5	109	39	148	516
Cachexia	...	7	...	7	...	8	9	17	24
Unspecified	...	40	...	42	...	19	16	35	77



Tables IV AND V—*contd.*

EUROPEANS (OFFICIAL AND NON-OFFICIAL).

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
39. Other diseases due to protozoa:								
Leishmaniasis ... ..	...	...	...	...	...	...	...	...
Kala-azar ... ..	...	...	...	...	...	...	...	...
Rat-bite fever ... ..	...	...	...	...	...	...	...	...
Spirochaetosis ictero-hæmorrhagica	...	...	...	...	...	...	...	...
Trypanosomiasis ... ..	...	2	...	2	...	1	...	1
Yaws ... ..	...	...	...	...	...	...	...	3
Ankylostomiasis ... ..	...	2	...	2	...	1	...	...
40. Ankylostomiasis ... ..	...	...	...	...	...	...	...	4
41. Hydatid cysts ... ..	...	...	...	...	...	...	...	...
42. Other diseases due to helminths:								
Cestodes (Taeniasis) ... ..	...	...	...	...	...	...	...	...
Nematodes (not including Ankylostoma)	...	...	...	...	...	10	2	12
Ascariasis ... ..	...	...	...	...	...	...	...	...
Dracontiasis (guinea worm)	...	...	...	...	...	1	1	2
Filarial elephantiasis ... ..	...	1	...	1	...	1	...	1
Filariasis... ..	...	...	...	...	...	...	...	1
Oxyuris vermicularis ... ..	...	...	...	...	...	5	...	5
Trichiniasis ... ..	...	...	...	...	...	...	...	...
Tricocephalus dispar ... ..	...	...	...	...	...	...	...	...
Trematodes ... ..	...	...	...	...	...	...	...	...
Schistosomiasis ... ..	...	...	...	...	...	...	...	...
43. Mycoses:								
1. Actino mycosis ... ..	...	...	...	...	...	...	...	...
2. Other mycoses ... ..	...	...	...	...	...	...	...	...
44. Other infectious or parasitic diseases:								
1. Vaccinia ... ..	...	...	...	...	...	3	...	3
2. Other sequelæ of vaccination (infective)	...	...	...	...	...	1	2	3
3. German measles ... ..	...	...	...	...	...	1	...	1
4. Varicella (Chickenpox) ... ..	...	4	...	4	...	1	...	5
5. Mumps ... ..	...	2	...	2	...	...	...	2
6. Other diseases included under 44	...	...	...	...	...	1	1	2
Blackwater fever ... ..	...	16	5	16	...	...	...	16
Dengue ... ..	...	...	...	...	...	...	...	...
Sandfly fever (Phlebotomus or Papataci fever)	...	...	...	...	...	...	...	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
II.—Cancer and Other Tumours.									
45-53. Malignant tumours:	...	...	...	...	...	...	...	...	...
45. Cancer of the buccal cavity and pharynx...	...	...	...	...	...	...	...	...	...
46. Cancer of the digestive organs and peritoneum ...	...	...	...	...	...	...	...	...	...
47. Cancer of the respiratory organs ...	...	...	...	...	...	...	...	...	...
48. Cancer of the uterus ...	...	...	...	...	...	...	...	...	...
49. Cancer of other female genital organs ...	...	...	...	...	...	...	...	...	...
50. Cancer of the breast ...	...	...	...	...	...	...	...	...	...
51. Cancer of the male genito-urinary organs	...	...	...	...	...	...	...	...	...
52. Cancer of the skin ...	...	...	...	...	...	...	...	...	...
53. Cancer of other or unspecified organs ...	...	...	...	...	...	...	...	...	...
54. Non-malignant tumours:	...	...	...	...	...	...	...	...	...
(a) Female genital organs ...	...	...	...	...	...	...	...	...	...
(b) Other sites ...	...	...	...	...	...	...	...	...	...
55. Tumours of undetermined nature:	...	...	...	...	...	...	...	...	...
(a) Female genital organs ...	...	...	...	...	...	...	...	...	...
(b) Other sites ...	...	...	...	...	...	...	...	...	...
III.—Rheumatism, Diseases of Nutrition and of Endocrine Glands and Other General Diseases.									
56. Rheumatic fever ...	...	...	...	...	...	...	...	...	...
57. Chronic rheumatism, Osteo-arthritis	...	...	...	...	...	...	...	...	...
58. Gout ...	...	...	...	...	...	...	...	...	...
59. Diabetes (not including Insipidus)	...	...	...	...	...	...	...	...	...
60. Scurvy ...	...	...	...	...	...	...	...	...	...
61. Beri-beri ...	...	...	...	...	...	...	...	...	...
62. Pellagra ...	...	...	...	...	...	...	...	...	...
63. Rickets ...	...	...	...	...	...	...	...	...	...
64. Osteomalacia ...	...	...	...	...	...	...	...	...	...
65. Diseases of the pituitary gland ...	...	...	...	...	...	...	...	...	...
66. Diseases of the thyroid and parathyroid glands:	...	...	...	...	...	...	...	...	...
(a) Simple goitre ...	...	...	...	...	...	...	...	...	...
(b) Exophthalmic goitre ...	...	...	...	...	...	...	...	...	...
(c) Myxœdema, Cretinism	...	...	...	...	...	...	...	...	...
(d) Tetany ...	...	...	...	...	...	...	...	...	...
(e) Other diseases of the thyroid or parathyroid glands	...	...	...	...	...	...	...	...	...
67. Diseases of the thymus ...	...	...	...	...	...	...	...	...	...

Tables IV and V—*contd.*

EUROPEANS (OFFICIAL AND NON-OFFICIAL).

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In-and Out Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
68. Diseases of the adrenals (non-tuberculosis)	...	...	...	...	...	...	...	...
69. Other general diseases:	...	...	...	...	...	...	...	...
1. Amyloid disease of unstated origin	...	...	...	3	...	17	9	26
2. Other diseases included under 69	...	3	...	...	...	...	...	29
IV.—Diseases of the Blood and Blood-Forming Organs.								
70. Hæmorrhagic conditions:	...	...	...	...	...	...	...	...
(a) Purpura	...	...	...	...	...	...	...	...
(b) Hæmophilia	...	...	...	...	...	...	...	...
71. Anæmia chlorosis:	...	...	...	...	...	...	...	...
(a) Pernicious anæmia	...	...	...	...	...	...	...	...
(b) Other anæmias and chlorosis	...	6	...	6	...	...	1	1
1. Splenic anæmias	...	...	...	...	...	...	...	6
2. Other diseases included under 71 (b)	...	...	...	...	...	10	19	29
72. Leukæmia, Aleukæmia:	...	...	...	...	...	...	...	...
(a) Leukæmia	...	...	...	...	...	1	...	1
(b) Aleukæmia (Lymphadenoma)	...	...	...	...	...	...	...	...
73. Diseases of the spleen:	...	...	...	...	...	...	...	...
1. Banti's disease	...	...	...	...	...	1	...	1
2. Other diseases of the spleen	...	...	...	...	...	...	...	...
74. Other diseases of the blood and blood-forming organs	...	...	...	...	...	...	...	...
V.—Chronic Poisoning.								
75. Alcoholism (acute or chronic)	...	3	...	3	...	...	...	3
76. Chronic poisoning by other organic substances	...	1	...	1	...	...	...	1
77. Chronic poisoning by mineral substances	...	...	...	...	...	...	...	...
VI.—Diseases of the Nervous and Sense Organs.								
78. Encephalitis (not including Lethargica: see 17):	...	...	...	...	...	...	...	...
(a) Cerebral abscess	...	...	...	...	...	...	...	...
(b) Other diseases included under 78	...	1	...	1	...	...	...	1
79. Meningitis	...	1	...	1	...	...	...	1
80. Tabes dorsalis (Locomotor ataxy)	...	1	...	1	...	...	...	1



DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients	
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females		Total
		Admis- sions	Deaths						
81. Other diseases of spinal cord:	...	...	...	...	...	...	...	...	
1. Progressive muscular atrophy	...	...	...	...	...	...	...	...	
2. Subacute combined sclerosis	...	...	...	...	...	...	...	...	
3. Myelitis of unstated origin	...	...	...	...	...	...	...	...	
4. Other diseases included under 81	...	...	...	...	...	...	...	...	
82. Cerebral hæmorrhage, Apoplexy, etc.:	...	...	...	...	...	...	...	...	
(a) 1. Cerebral hæmorrhage	...	1	1	1	...	...	...	1	
2. Apoplexy (lesion unstated)	...	...	...	...	...	...	...	...	
(b) 1. Cerebral embolism	...	...	...	...	...	...	...	...	
2. Cerebral thrombosis	...	...	...	...	...	...	...	...	
3. Cerebral softening	...	...	...	...	...	...	...	...	
(c) 1. Hemiplegia	...	1	...	1	...	3	...	3	
2. Other paralyzes of unstated origin	...	...	...	...	...	...	...	...	
83. General paralysis of the insane	...	...	...	...	...	...	...	...	
84. Other forms of insanity	...	1	...	1	...	...	...	1	
85. Epilepsy	...	...	...	...	...	1	...	1	
86. Infantile convulsions (under 5 years of age)	...	1	...	1	...	1	...	2	
87. Other diseases of the nervous system:	...	...	...	...	...	...	...	...	
(a) Chorea	...	...	...	...	...	21	17	38	
(b) Neuritis, neuralgia	...	9	...	9	...	...	...	...	
(c) Paralysis agitans	...	...	...	...	...	...	...	...	
(d) Disseminated sclerosis	...	...	...	...	...	1	...	1	
(e) Other diseases included under 87	...	9	...	9	...	14	7	21	
88. Diseases of the eye and annexa:	...	...	...	...	...	...	...	...	
Blepharitis	...	...	...	...	...	4	2	6	
Cataract (all forms)	...	...	...	...	...	2	1	3	
Conjunctivitis	...	3	...	3	...	45	11	56	
Glaucoma	...	...	...	...	...	...	...	...	
Iritis	...	...	...	...	...	...	...	...	
Keratitis	...	2	...	2	...	2	2	4	
Ophthalmia (not including Neonatorum: see 35 (1))	...	...	...	...	...	...	...	...	
Optic Neuritis	...	1	...	1	...	...	...	...	
Trachoma	...	1	...	1	...	...	...	...	
Other diseases of the eye	...	1	...	1	...	13	3	16	
89. Diseases of the ear and of the mastoid sinus:	...	...	...	...	...	...	...	...	
(a) Otitis and other diseases of the ear...	...	5	...	5	...	102	37	139	
(b) Diseases of the mastoid sinus	...	1	...	1	...	8	4	12	
	...	...	...	...	...	...	...	...	
	...	...	...	...	...	...	...	...	
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RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
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		Admis- sions	Deaths						
VII.—Diseases of the Circulatory System.									
90. Pericarditis ... ..	...	...	...	...	...	...	...	...	...
91. Acute endocarditis:									
1. Malignant endocarditis	...	...	...	...	...	...	...	...	...
2. Other acute endocarditis	...	...	...	...	...	...	...	...	...
92. Chronic endocarditis, Valvular disease	...	...	...	...	...	...	...	...	...
1. Aortic valve disease	...	...	...	...	...	...	...	...	...
2. Mitral valve disease	...	...	...	...	...	1	...	1	...
3. Aortic and mitral valve disease	...	...	...	...	...	...	...	...	...
4. Endocarditis not returned as acute or chronic	...	...	...	...	...	...	...	...	...
5. Other or unspecified valve diseases	...	...	...	...	...	2	2	4	...
93. Diseases of the myocardium:									
(a) Acute myocarditis	...	...	...	...	...	...	...	...	...
(b) Myocardial degeneration	...	...	...	...	...	...	...	...	...
1. Fatty heart	...	...	...	...	...	2	...	2	...
2. Cardiovascular degeneration	...	...	...	...	...	...	...	...	...
3. Other diseases included under 93 (b)	...	2	...	2	...	1	...	1	...
(c) Myocarditis not distinguished as acute or chronic	...	2	...	2	...	...	...	...	...
94. Diseases of the coronary arteries, Angina pectoris	...	...	...	...	...	1	...	1	...
95. Other diseases of the heart:									
(a) Disordered action of heart	...	2	...	2	...	3	2	5	...
(b) Other diseases included under 95	...	2	...	2	...	7	...	7	...
96. Aneurysm	...	...	...	...	...	...	...	...	...
97. Arterio-sclerosis	...	2	...	2	...	1	...	1	...
98. Gangrene	...	...	...	...	...	...	...	...	...
99. Other diseases of the arteries	...	...	...	...	...	1	1	2	...
100. Diseases of the veins (varix, hæmorrhoids, phlebitis, etc.):									
1. Varix—									
Hæmorrhoids	1	2	...	3	...	13	5	18	21
Varicocele	...	...	...	...	...	1	...	1	1
Varicose veins	...	...	...	...	...	...	4	4	4
2. Other diseases of the veins—									
Phlebitis	...	...	...	...	...	...	...	...	...







DISEASES

X.—Non-venereal Diseases of the Genito-Urinary System and Annexa.

130. Acute nephritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
145. Puerperal sepsis: (a) Puerperal septicaemia and pyæmia ... (b) Puerperal tetanus ...	... ... ...	... ...	... ...	... ...	... ...	... ...	... ...	... ...
146. Puerperal albuminuria and convulsions: 1. Puerperal convulsions ... 2. Other conditions included under 146 ...	... ... ...	... ... 9	... ... ...	... ... 9	... ... ...	... ... ...	... ... 13	... ... 22
147. Other toxæmias of pregnancy ...	...	...	...	...	...	...	...	...
148. Puerperal phlegmasia alba dolens, embolism and sudden death: (a) Puerperal phlegmasia alba dolens not returned as septic (b) Puerperal embolism and sudden death ...	... ... ...	... ... 4	... ... ...	... ... 4	... ... ...	... ... ...	... ... 2	... ... 6
149. Other accidents of childbirth ...	...	...	...	...	...	...	...	...
150. Other or unspecified conditions of the puerperal state: 1. Puerperal insanity ... 2. Puerperal diseases of the breast ... 3. Childbirth (unqualified) ...	... ... ... ...	... 5 67	... ... ...	... 5 67	... ... 1	... ... ...	... ... 1	... 5 68
XII.—Diseases of the Skin and Cellular Tissue.								
151. Carbuncle, boil ...	...	11	...	11	...	47	36	83
152. Cellulitis, acute abscess: 1. Cellulitis ... 2. Acute abscess ...	... ... 1	11 23	... ...	11 24	... ...	23 30	3 8	26 38
153. Other diseases of the skin and its annexa: (a) Eczema ... (b) Herpes ... (c) Impetigo ... (d) Pediculosis ... (e) Psoriasis ... (f) Scabies... (g) Sebaceous cyst ... (h) Ulcers ... (i) Urticaria ... (j) Others...	... ... ... ... ... ... ... ... ... ... 1	7 1 ... ... ... ... 16 4 5	... ... ... ... ... ... ... ... ...	7 1 ... ... ... ... 16 4 5	... ... ... ... ... ... ... ... ...	65 2 7 ... ... ... 80 22 36	11 3 8 ... ... ... 26 8 22	76 5 15 2 4 10 106 30 58

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
XIII.—Diseases of the Bones and Organs of Locomotion.									
154. Acute infective osteomyelitis and periostitis	...	...	...	...	...	...	...	...	...
155. Other diseases of the bones	...	...	...	...	...	...	...	...	...
156. Diseases of the joints and other organs of locomotion:									
(a) Diseases of the joints...	...	9	...	9	...	28	4	32	41
(b) Diseases of other organs of locomotion	...	3	...	3	...	36	8	44	47
XIV.—Congenital Malformations.									
157. Congenital malformations:									
(a) Congenital hydrocephalus	...	...	...	...	...	...	...	...	...
(b) Spina bifida and meningocele	...	...	...	...	...	...	...	...	...
(c) Congenital malformations of heart	...	...	...	...	...	...	...	...	...
(d) Monstrosities	...	...	...	...	...	...	...	...	...
(e) Other congenital malformations—									
1. Congenital pyloric stenosis	...	...	...	...	...	...	...	...	...
2. Cleft palate, harelip	...	...	...	...	...	...	...	...	...
3. Imperforate anus	...	...	...	...	...	...	...	...	...
4. Other stated congenital malformations	...	...	...	...	...	...	...	...	...
XV.—Diseases of Early Infancy.									
158. Congenital debility	...	...	...	...	...	3	2	5	5
159. Premature birth	...	...	...	...	...	...	...	...	...
160. Injury at birth:									
(a) With mention of casarean section	...	...	...	...	...	...	...	...	...
(b) Without mention of casarean section	...	...	...	...	...	...	...	...	...
161. Other diseases peculiar to early infancy:									
(a) Atelectasis	...	...	...	...	...	...	...	...	...
(b) Icterus neonatorum	...	...	...	...	...	...	...	...	...
(c) Other diseases included under 161	...	1	...	1	...	1	1	2	3
XVI.—Old Age.									
162. Old Age:									
(a) Senile dementia	...	...	...	...	...	...	...	...	...
(b) Other forms of senile decay	...	...	...	...	...	...	...	...	...



DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients	
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females		Total
		Admis- sions	Deaths						
XVII.—Affections Produced by External Causes.									
163. Suicide by solid or liquid poisons and corrosive substances	...	...	...	...	...	...	...	...	...
164. Suicide by poisonous gas ... ..	...	...	...	...	...	...	...	...	...
165. Suicide by hanging or strangulation	...	...	...	...	...	...	...	...	...
166. Suicide by drowning...	...	...	...	...	...	...	...	...	...
167. Suicide by firearms ... ..	...	1	1	1	...	...	...	...	1
168. Suicide by cutting or piercing instruments	...	...	...	...	...	...	...	...	...
169. Suicide by jumping from high place	...	...	...	...	...	...	...	...	...
170. Suicide by crushing ... ..	...	...	...	...	...	...	...	...	...
171. Suicide by other means ... ..	...	...	...	...	...	...	...	...	...
172. Infanticide (under one year)	...	...	...	...	...	...	...	...	...
173. Homicide by firearms ... ..	...	...	...	...	...	...	...	...	...
174. Homicide by cutting or piercing instruments	...	...	...	...	...	...	...	...	...
175. Homicide by other means ... ..	...	...	...	...	...	...	...	...	...
176. Attack by venomous animals	...	...	1	1	...	11	5	16	17
177. Food poisoning ... ..	...	2	...	2	...	1	...	1	3
178. Accidental absorption of irrespirable or poisonous gas	...	...	...	...	...	...	...	...	...
179. Other acute accidental poisoning (not by gas)	...	2	1	2	...	1	1	2	4
180. Conflagration ... ..	...	...	...	...	...	1	1	2	2
181. Accidental burns (conflagration excepted)	...	1	...	1	...	9	...	9	10
182. Accidental mechanical suffocation	...	...	...	...	...	...	...	...	...
183. Accidental drowning ... ..	...	...	...	...	...	...	...	...	...
184. Accidental injury by firearms	...	...	...	...	...	1	...	1	1
185. Accidental injury by cutting or piercing instruments	...	5	...	5	...	35	6	41	46
186. Accidental injury by fall, crushing, etc. ...	...	24	...	24	...	74	13	87	111
187. Cataclysm ... ..	...	...	...	...	...	...	...	...	...
188. Injury by animals (poisoning by venomous animals excepted)	1	1	...	2	...	15	4	19	21
189. Hunger or thirst ... ..	...	...	...	...	...	...	...	...	...
190. Excessive cold ... ..	...	...	...	...	...	...	...	...	...
191. Excessive heat ... ..	...	1	...	1	...	3	...	3	4
192. Lightning ... ..	...	...	...	...	...	...	...	...	...
193. Electricity (lightning excepted)	...	...	...	...	...	...	...	...	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
194. Other and unstated forms of accidental violence : 1. Inattention at birth ... .. 2. Other causes included under 194 ... .. 195. Violent deaths of unstated nature (i.e. accidental, suicidal, etc.) 196. Wounds of war ... .. 197. Execution of civilians by belligerent armies ... .. 198. Execution ... ..	... ... ... ... ... ... ...	13 ... ... ... ... ... ...	... ... ... ... ... ... ...	... ... ... ... ... ... ...	53 ... ... ... ... ... ...	8 ... ... ... ... ... ...	61 ... ... ... ... ... ... ...	... 74 ... ... ... ... ...	
XVIII.—Ill-defined Diseases.									
199. Sudden deaths ... .. 200. Cause of death unstated or ill-defined ... .. 201. Pyrexia of uncertain origin ... .. 202. Other ill-defined diseases ... ..	... ... ... 1	... ... 18 17	... ... ... ...	... ... 18 18	... ... 31 15	... ... 16 15	... ... 47 30	... ... 65 48	
Total ...	20	1,300	18	1,320	1,829	855	2,684	4,004	

## RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
I.—Infectious and Parasitic Diseases.									
1. Typhoid fever	...	...	...	...	...	...	...	...	77
2. Paratyphoid fevers:									
(a) Paratyphoid A	...	...	...	...	...	...	...	...	1
(b) Paratyphoid B	...	...	...	...	...	...	...	...	1
3. Typhus fever...	...	...	...	...	...	...	...	...	1
4. Relapsing fever	...	...	...	...	...	...	...	...	6
5. Undulant fever	...	...	...	...	...	...	...	...	...
6. Smallpox	...	...	...	...	...	...	...	...	7
7. Measles	...	...	...	...	...	...	...	...	211
8. Scarlet fever	...	...	...	...	...	...	...	...	85
9. Whooping cough	...	...	...	...	...	...	...	...	...
10. Diphtheria	...	...	...	...	...	...	...	...	...
11. Influenza	...	...	...	...	...	...	...	...	...
12. Cholera	...	...	...	...	...	...	...	...	...
13. Dysentery:									
(a) Amoebic	...	...	...	...	...	...	...	...	...
(b) Bacillary	...	...	...	...	...	...	...	...	...
(c) Other or unspecified	...	...	...	...	...	...	...	...	...
14. Plague:									
(a) Bubonic	...	...	...	...	...	...	...	...	...
(b) Pneumonic	...	...	...	...	...	...	...	...	...
(c) Septicæmic	...	...	...	...	...	...	...	...	...
(d) Not otherwise defined	...	...	...	...	...	...	...	...	...
15. Erysipelas	...	...	...	...	...	...	...	...	...
16. Acute poliomyelitis	...	...	...	...	...	...	...	...	...
17. Encephalitis lethargica	...	...	...	...	...	...	...	...	...
18. Cerebro-spinal fever	...	...	...	...	...	...	...	...	...
19. Glanders	...	...	...	...	...	...	...	...	...
20. Anthrax	...	...	...	...	...	...	...	...	...
21. Rabies...	...	...	...	...	...	...	...	...	...
22. Tetanus	...	...	...	...	...	...	...	...	...
23. Tuberculosis of the respiratory system	...	...	...	...	...	...	...	...	...
24. Tuberculosis of the central nervous system	...	...	...	...	...	...	...	...	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
25. Tuberculosis of intestines and peritoneum	1	8	3	9	...	1	...	1	10
26. Tuberculosis of vertebral column ...	5	23	6	28	3	10	1	11	39
27. Tuberculosis of other bones and joints	9	28	2	37	6	29	14	43	80
28. Tuberculosis of skin and subcutaneous tissues	...	5	2	5	...	6	4	10	15
29. Tuberculosis of lymphatic system (abdominal and bronchial glands excepted) ...	5	50	...	55	10	82	43	125	180
30. Tuberculosis of genito-urinary system	...	7	1	7	1	2	...	2	9
31. Tuberculosis of other organs	...	38	...	38	8	21	19	40	78
32. Disseminated tuberculosis:									
(a) Acute ...	...	3	1	3	...	1	1	2	5
(b) Chronic	...	4	1	4	...	1	...	1	5
(c) Not distinguished as acute or chronic	...	3	...	3	1	...	...	...	3
33. Leprosy ...	103	284	7	387	67	298	129	427	814
34. Syphilis:									
(a) Congenital	...	72	4	72	4	523	524	1,047	1,119
(b) Acquired	...	12	...	16	...	18	4	22	38
1. Primary ...	31	511	4	542	22	5,895	3,820	9,715	10,257
2. Secondary	44	411	4	455	17	2,212	1,607	3,819	4,274
3. Tertiary ...	11	209	9	220	15	2,579	2,638	5,217	5,437
4. Unspecified	1	14	...	15	2	529	468	997	1,012
35. Other venereal diseases:									
1. Gonorrhoeal or purulent ophthalmia	3	49	...	52	2	155	29	184	236
2. Other diseases included under 35:	1	65	...	66	2	160	11	171	237
Gonorrhoea	27	682	1	709	20	7,374	921	8,295	9,004
Soft Chancre	...	25	...	25	...	65	...	65	90
36. Purulent infection, septicaemia:									
(a) Septicaemia	2	16	8	18	1	2	2	4	22
(b) Pyaemia	...	8	2	8	...	18	15	33	41
(c) Gas gangrene	...	2	2	2	...	1	...	1	3
37. Yellow fever ...	...	...	...	...	...	...	...	...	...
38. Malaria:									
Tertian	1	69	1	70	1	1,471	574	2,045	2,115
Quartan	...	4	...	4	...	105	16	121	125
Subtertian	33	2,647	39	2,680	43	17,010	5,280	22,290	24,970
Cachexia	1	62	3	63	1	924	530	1,454	1,517
Cerebral	...	2	1	2	...	...	...	...	2
Unspecified	4	323	2	327	3	5,172	1,698	6,870	7,197



## RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
39. Other diseases due to protozoa: ...	...	3	...	3	...	...	...	3
Leishmaniasis ...	1	...	...	1	...	...	...	1
Kala-azar ...	...	...	...	...	...	...	...	...
Rat-bite fever ...	...	...	...	...	...	8	6	14
Spirochaetosis ictero-haemorrhagica ...	...	...	...	...	...	...	...	...
Trypanosomiasis ...	40	259	38	299	30	24	9	33
Yaws ...	91	2,033	6	2,124	117	38,149	31,793	69,942
Ankylostomiasis ...	63	1,314	101	1,377	80	6,955	4,872	11,827
41. Hydatid cysts ...	...	3	1	3	...	...	...	3
42. Other diseases due to helminths: ...	3	44	2	47	2	147	58	205
Cestodes (Taeniasis) ...	2	207	...	209	6	7,805	2,597	10,402
Nematodes (not including Ankylostoma): ...	3	64	...	67	4	953	616	1,569
Ascariasis ...	...	...	...	...	...	4,268	3,474	7,742
Dracontiasis (guinea worm) ...	...	...	...	...	...	3	1	4
Filarial elephantiasis ...	...	201	5	201	14	133	31	164
Filariasis... ...	...	30	1	30	3	27	3	30
Oxyuris vermicularis ...	1	7	...	8	...	125	51	176
Trichiniasis ...	...	...	...	...	...	2	3	5
Tricocephalus dispar ...	...	1	...	1	...	9	6	15
Trematodes: ...	...	...	...	...	...	6	4	10
Schistosomiasis ...	26	403	12	429	16	2,757	404	3,161
43. Mycoses:	...	...	...	...	...	...	...	...
1. Actinomycosis ...	...	1	...	1	...	22	4	26
2. Other mycoses ...	...	...	...	...	...	137	42	179
44. Other infectious or parasitic diseases:	...	...	...	...	...	...	...	...
1. Vaccinia ...	...	3	...	3	...	333	198	531
2. Other sequelae of vaccination (infective) ...	...	...	...	...	...	369	173	542
3. German measles ...	...	...	...	...	...	4	...	4
4. Varicella (Chickenpox) ...	...	451	...	456	19	353	41	394
5. Mumps ...	5	31	...	31	...	378	121	499
6. Other diseases included under 44: ...	...	...	...	...	...	2	1	3
Blackwater fever ...	1	34	9	35	...	2	...	2
Dengue ...	...	...	...	...	...	...	...	...
Sandfly fever (Phlebotomus or Pappataci fever) ...	...	...	...	...	...	...	...	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
II.—Cancer and Other Tumours.									
45-53. Malignant tumours:									
45. Cancer of the buccal cavity and pharynx...	...								
46. Cancer of the digestive organs and peritoneum ...	...								
47. Cancer of the respiratory organs ...	...								
48. Cancer of the uterus ...	...								
49. Cancer of other female genital organs ...	...								
50. Cancer of the breast ...	...								
51. Cancer of the male genito-urinary organs ...	...								
52. Cancer of the skin ...	...								
53. Cancer of other or unspecified organs ...	...								
54. Non-malignant tumours:									
(a) Female genital organs ...	...								
(b) Other sites ...	...								
55. Tumours of undetermined nature:									
(a) Female genital organs ...	...								
(b) Other sites ...	...								
III.—Rheumatism, Diseases of Nutrition and of Endocrine Glands and Other General Diseases.									
56. Rheumatic fever ...	...								
57. Chronic rheumatism, Osteo-arthritis ...	...								
58. Gout ...	...								
59. Diabetes (not including Insipidus) ...	...								
60. Scurvy ...	...								
61. Beri-beri ...	...								
62. Pellagra ...	...								
63. Rickets ...	...								
64. Osteomalacia ...	...								
65. Diseases of the pituitary gland ...	...								
66. Diseases of the thyroid and parathyroid glands:									
(a) Simple goitre ...	...								
(b) Exophthalmic goitre ...	...								
(c) Myxedema, Cretinism ...	...								
(d) Tetany ...	...								
(e) Other diseases of the thyroid or parathyroid glands ...	...								
67. Diseases of the thymus ...	...								

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospital at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
68. Diseases of the adrenals (non-tuberculosis)	...	...	...	...	...	...	...	...
69. Other general diseases:	...	...	...	...	...	...	...	...
1. Amyloid disease of unstated origin	...	7	1	7	...	29	8	37
2. Other diseases included under 69	...	54	1	54	...	206	48	254
308								
IV.—Diseases of the Blood and Blood-Forming Organs.								
70. Haemorrhagic conditions:	...	...	...	...	...	...	...	...
(a) Purpura	...	3	1	3	...	...	...	3
(b) Haemophilia	...	2	1	2	...	...	...	2
71. Anæmia chlorosis:	...	...	...	...	...	...	...	...
(a) Pernicious anæmia	...	9	...	9	...	146	87	233
(b) Other anæmias and chlorosis	...	32	1	33	...	157	98	255
1. Splenic anæmias	...	2	...	2	...	95	48	143
2. Other diseases included under 71 (b)	...	67	4	67	...	585	318	903
970								
72. Leukæmia, Aleukæmia:	...	...	...	...	...	...	...	...
(a) Leukæmia	...	5	3	5	...	6	1	7
(b) Aleukæmia (Lymphadenoma)	...	4	1	4	...	2	...	2
73. Diseases of the spleen:	...	...	...	...	...	...	...	...
1. Banti's disease	...	2	...	2	...	9	2	11
2. Other diseases of the spleen	...	31	3	34	...	1,343	707	2,050
74. Other diseases of the blood and blood-forming organs	...	...	...	...	...	1	...	1
13								
2,084								
1								
V.—Chronic Poisoning.								
75. Alcoholism (acute or chronic)	...	8	...	8	...	...	...	8
76. Chronic poisoning by other organic substances	...	4	...	4	...	...	...	4
77. Chronic poisoning by mineral substances	...	17	...	17	...	...	...	17
VI.—Diseases of the Nervous and Sense Organs.								
78. Encephalitis (not including Lethargica: see 17):	...	...	...	...	...	...	...	...
(a) Cerebral abscess	...	8	8	8	...	5	4	9
(b) Other diseases included under 78	...	2	...	2	...	...	...	2
79. Meningitis	...	19	10	19	...	4	2	6
80. Tabes dorsalis (Locomotor ataxy)	...	12	...	12	...	1	...	1
13								

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
81. Other diseases of the spinal cord:	...	...	...	...	...	...	...	...	...
1. Progressive muscular atrophy	...	...	...	...	...	...	...	...	...
2. Subacute combined sclerosis	...	...	...	...	...	...	...	...	...
3. Myelitis of unstated origin	...	...	...	...	...	...	...	...	...
4. Other diseases included under 81	...	...	...	...	...	...	...	...	...
82. Cerebral hæmorrhage, Apoplexy, etc.:	...	...	...	...	...	...	...	...	...
(a) 1. Cerebral hæmorrhage	...	...	...	...	...	...	...	...	...
2. Apoplexy (lesion unstated)	...	...	...	...	...	...	...	...	...
(b) 1. Cerebral embolism	...	...	...	...	...	...	...	...	...
2. Cerebral thrombosis	...	...	...	...	...	...	...	...	...
3. Cerebral softening	...	...	...	...	...	...	...	...	...
(c) 1. Hemiplegia	...	...	...	...	...	...	...	...	...
2. Other paralyses of unstated origin	...	...	...	...	...	...	...	...	...
83. General paralysis of the insane	...	...	...	...	...	...	...	...	...
84. Other forms of insanity	...	...	...	...	...	...	...	...	...
85. Epilepsy	...	...	...	...	...	...	...	...	...
86. Infantile convulsions (under 5 years of age)	...	...	...	...	...	...	...	...	...
87. Other diseases of the nervous system:	...	...	...	...	...	...	...	...	...
(a) Chorea	...	...	...	...	...	...	...	...	...
(b) Neuritis, neuralgia	...	...	...	...	...	...	...	...	...
(c) Paralysis agitans	...	...	...	...	...	...	...	...	...
(d) Disseminated sclerosis	...	...	...	...	...	...	...	...	...
(e) Other diseases included under 87	...	...	...	...	...	...	...	...	...
88. Diseases of the eye and annexa:	...	...	...	...	...	...	...	...	...
Blepharitis	...	...	...	...	...	...	...	...	...
Cataract (all forms)	...	...	...	...	...	...	...	...	...
Conjunctivitis	...	...	...	...	...	...	...	...	...
Glaucoma	...	...	...	...	...	...	...	...	...
Iritis	...	...	...	...	...	...	...	...	...
Keratitis	...	...	...	...	...	...	...	...	...
Ophthalmia (not including Neonatorum: see 35 (1))	...	...	...	...	...	...	...	...	...
Optic Neuritis	...	...	...	...	...	...	...	...	...
Trachoma	...	...	...	...	...	...	...	...	...
Other diseases of the eye	...	...	...	...	...	...	...	...	...
89. Diseases of the ear and of the mastoid sinus:	...	...	...	...	...	...	...	...	...
(a) Otitis and other diseases of the ear...	...	...	...	...	...	...	...	...	...
(b) Diseases of the mastoid sinus	...	...	...	...	...	...	...	...	...





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		Admis- sions	Deaths						
101. Diseases of the lymphatic system (Lymphangitis, etc.):									
Lymphadenitis ... ..	7	138	...	145	5	743	170	913	1,058
Lymphangitis ... ..	1	29	...	30	...	259	52	311	341
102. Abnormalities of blood pressure ... ..	...	1	...	1	...	5	4	9	10
103. Other diseases of the circulatory system ... ..	...	8	1	8	...	31	48	79	87
VIII.—Diseases of the Respiratory System.									
104. Diseases of the nasal fossæ and annexa:									
1. Diseases of the nose ... ..	...	77	...	77	...	5,627	1,648	7,275	7,352
2. Diseases of the accessory nasal sinuses ... ..	...	8	...	8	1	359	128	487	495
105. Diseases of the larynx ... ..	1	9	2	10	1	341	122	463	473
106. Bronchitis:									
(a) Acute bronchitis ... ..	8	403	2	411	6	18,300	7,891	26,191	26,602
(b) Chronic bronchitis ... ..	6	164	1	170	3	6,376	3,518	9,894	10,064
(c) Bronchitis not distinguished as acute or chronic ... ..	1	95	2	96	2	11,372	5,025	16,397	16,493
107. Broncho-pneumonia ... ..	4	181	50	185	4	193	109	302	487
108. Lobar pneumonia ... ..	25	668	147	693	27	130	50	180	873
109. Pneumonia (not otherwise defined) ... ..	1	11	3	12	1	17	5	22	34
110. Pleurisy:									
1. Empyema ... ..	3	19	4	22	1	6	1	7	29
2. Other pleurisy ... ..	...	94	1	94	5	253	46	299	393
111. Congestion and hæmorrhagic infarct of lung, etc. ... ..	...	7	1	7	...	5	2	7	14
112. Asthma ... ..	4	136	...	140	6	544	206	750	890
113. Pulmonary emphysema ... ..	...	...	...	...	...	33	18	51	51
114. Other diseases of the respiratory system:									
(a) Chronic interstitial pneumonia, including occupational diseases of the lung ... ..	...	1	...	1	...	1	...	1	2
(b) Other diseases included under 114 ... ..	1	26	...	27	...	162	23	185	212
IX.—Diseases of the Digestive System.									
115. Diseases of the buccal cavity, pharynx, etc.:									
1. Diseases of the teeth and gums ... ..	2	101	1	103	1	9,773	4,721	14,494	14,597
2. Ludwig's angina ... ..	...	...	...	...	...	17	1	18	18
3. Diseases of the tonsils ... ..	1	154	...	155	2	2,494	1,173	3,667	3,822
4. Other diseases included under 115 ... ..	2	79	3	82	3	3,935	1,676	5,611	5,693
116. Diseases of the œsophagus ... ..	...	1	...	1	...	6	1	7	8

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		Admis- sions	Deaths					
117. Ulcer of the stomach or duodenum : (a) Ulcer of the stomach     ...     ... (b) Ulcer of the duodenum   ...     ...	2 ...	17 3	2 1	19 3	...	15 1	... 1	15 2
118. Other diseases of the stomach : 1. Inflammation of the stomach 2. Other diseases included under 118	... ...	52 66	1 ...	52 66	...	395 1,489	163 711	558 2,200
119 and 120. Diarrhoea and Enteritis : Under { (a) 1. Colitis     ...     ... two     { 2. Other diarrhoea and enteritis     ...     ... years   { (b) Ulceration of the intestines     ...     ... Over     { (a) 1. Colitis     ...     ... two     { 2. Other diarrhoea and enteritis     ...     ... years   { (b) Ulceration of the intestines     ...     ...	... 1 ... ... 9 ... 2	21 50 ... 92 404 2 41	... 5 ... ... 19 ... 2	21 51 ... 92 413 2 43	...	939 1,619 6 1,603 4,146 39 13	438 1,066 3 676 1,445 24 3	1,377 2,685 9 2,279 5,591 63 16
121. Appendicitis     ...     ... 122. Hernia, intestinal obstruction : (a) Hernia— 1. Strangulated hernia     ...     ... 2. Hernia not returned as strangulated	... ...	25 552 17	3 10 13	25 584 18	...	1 177 2	... 5 ...	1 182 2
123. Other diseases of the intestines : 1. Constipation, intestinal stasis 2. Diverticulitis     ...     ... 3. Other diseases included under 123	4 ... ...	209 ... 88	... ... 3	213 ... 88	2 ... 4	27,623 1 927	12,765 ... 420	40,388 1 1,347
124. Cirrhosis of the liver : (a) Returned as alcoholic     ...     ... (b) Not returned as alcoholic     ...     ...	1 3	6 49	3 16	7 52	1 5	10 12	8 2	18 14
125. Other diseases of the liver : 1. Acute yellow atrophy     ...     ... 2. Other diseases included under 125	... 12	4 131	... 13	4 143	... 6	9 402	1 119	10 521
126. Biliary calculi     ...     ... 127. Other diseases of the gall bladder and ducts : 1. Cholecystitis without record of biliary calculi 2. Other diseases included under 127	... ...	... 6	... ...	... 6	...	5 9	1 ...	6 9
128. Diseases of the pancreas     ...     ... 129. Peritonitis without stated cause     ...     ...	... ...	11 1 19	... ... 9	11 1 19	...	27 7 ...	... 6 ...	33 7 ...
	...	...	...	19	...	...	...	19



DISEASES

X.—Non-venereal Diseases of the Genito-Urinary System and Annexa.

130. Acute nephritis	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...</
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RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out Patients-
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total
		Admis- sions	Deaths					
145. Puerperal sepsis: (a) Puerperal septicaemia and pyæmia ... (b) Puerperal tetanus ...	... ... ...	25 ...	9 ...	25 ...	... ...	... ...	5 ...	5 ...
146. Puerperal albuminuria and convulsions: 1. Puerperal convulsions ... 2. Other conditions included under 146 ...	... ... ...	... 2 24	... ... 1	... 2 24	... ... ...	... ... ...	... 7 81	... 7 81
147. Other toxæmias of pregnancy ...	...	...	...	...	...	...	...	...
148. Puerperal phlegmasia alba dolens, embolism and sudden death: (a) Puerperal phlegmasia alba dolens not returned as septic ... (b) Puerperal embolism and sudden death ...	... ... ...	1 6 76	... ... 12	1 6 76	... ... 1	... ... ...	... ... 10	... ... 10
149. Other accidents of childbirth ...	...	...	...	...	...	...	...	...
150. Other or unspecified conditions of the puerperal state: 1. Puerperal insanity ... 2. Puerperal diseases of the breast ... 3. Childbirth (unqualified) ...	... ... ... 10	1 14 444	1 ... 3	1 14 454	... ... 3	... ... ...	2 83 52	2 83 52
XII.—Diseases of the Skin and Cellular Tissue.								
151. Carbuncle, boil ...	...	...	...	...	...	2,062	405	2,467
152. Cellulitis, acute abscess: 1. Cellulitis ... 2. Acute abscess ...	1 45	70 428 676	... 14 11	71 438 721	1 29 30	2,062 2,860 3,178	405 624 920	2,467 3,484 4,098
153. Other diseases of the skin and its annexa: (a) Eczema ... (b) Herpes ... (c) Impetigo ... (d) Pediculosis ... (e) Psoriasis ... (f) Scabies ... (g) Sebaceous cyst ... (h) Ulcers ... (i) Urticaria ... (j) Others ...	... 1 ... ... 2 4 ... 233 ... 20	124 15 3 ... 16 153 16 2,844 28 97	1 ... ... ... ... ... 14 ... ...	124 16 3 ... 18 157 16 3,077 28 117	... ... ... ... ... 6 ... 247 ... 4	2,523 329 193 32 178 13,478 67 33,779 541 1,077	860 58 162 16 92 5,474 14 9,725 185 349	3,383 387 355 48 270 18,952 81 43,504 726 1,426

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients	
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females		Total
		Admis- sions	Deaths						
XIII.—Diseases of the Bones and Organs of Locomotion.									
154. Acute infective osteomyelitis and periostitis	...	62	3	62	10	71	45	116	178
155. Other diseases of the bones	25	129	8	154	13	529	160	689	843
156. Diseases of the joints and other organs of locomotion:									
(a) Diseases of the joints...	15	243	4	258	9	1,859	495	2,354	2,612
(b) Diseases of other organs of locomotion	...	241	2	241	2	8,237	2,503	10,740	10,981
XIV.—Congenital Malformations.									
157. Congenital malformations:									
(a) Congenital hydrocephalus	...	...	...	...	...	...	...	...	...
(b) Spina bifida and meningocele	...	...	...	...	...	...	...	...	...
(c) Congenital malformations of heart	...	...	...	...	...	...	...	...	...
(d) Monstrosities	...	...	...	...	...	...	...	...	...
(e) Other congenital malformations—	...	...	...	...	...	...	...	...	...
1. Congenital pyloric stenosis	...	...	...	...	...	...	...	...	...
2. Cleft palate, harelip	...	1	...	1	...	1	1	2	3
3. Imperforate anus	...	1	...	1	...	...	...	...	1
4. Other stated congenital malformations	...	3	1	3	...	5	1	6	9
XV.—Diseases of Early Infancy.									
158. Congenital debility	1	10	3	11	1	92	63	155	166
159. Premature birth	...	...	...	...	...	2	1	3	3
160. Injury at birth:									
(a) With mention of cesarean section	...	...	...	...	...	...	...	...	...
(b) Without mention of cesarean section	...	...	...	...	...	...	...	...	...
161. Other diseases peculiar to early infancy:									
(a) Atelectasis	...	1	...	1	...	...	...	...	1
(b) Icterus neonatorum	...	...	...	...	...	...	...	...	...
(c) Other diseases included under 161	...	5	1	5	...	3	3	6	11
XVI.—Old Age.									
162. Old Age:									
(a) Senile dementia	...	2	...	2	...	20	7	27	29
(b) Other forms of senile decay	...	97	18	97	3	268	105	373	470

RETURN OF DISEASES AND DEATHS (IN-PATIENTS) AND OF DISEASES (OUT-PATIENTS) FOR THE YEAR 1933.

DISEASES	In-Patients				Out-Patients			Total Cases In- and Out-Patients	
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females		Total
		Admis- sions	Deaths						
XVII.—Affections Produced by External Causes.									
163. Suicide by solid or liquid poisons and corrosive substances	...	...	...	...	...	...	...	...	...
164. Suicide by poisonous gas	...	...	...	...	...	...	...	...	...
165. Suicide by hanging or strangulation	...	3	...	3	...	...	...	...	3
166. Suicide by drowning...	...	1	...	1	...	...	...	...	1
167. Suicide by firearms	...	1	1	1	...	...	...	...	1
168. Suicide by cutting or piercing instruments	...	5	1	5	...	...	...	...	5
169. Suicide by jumping from high place	...	...	...	...	...	...	...	...	...
170. Suicide by crushing	...	...	...	...	...	...	...	...	...
171. Suicide by other means	...	...	...	...	...	...	...	...	...
172. Infanticide (under one year)	...	...	...	...	...	...	...	...	...
173. Homicide by firearms	...	...	...	...	...	...	...	...	...
174. Homicide by cutting or piercing instruments	...	21	1	21	...	35	9	44	65
175. Homicide by other means	...	16	...	16	1	18	3	21	37
176. Attack by venomous animals	3	70	3	73	1	186	51	237	310
177. Food poisoning	...	15	...	15	...	133	32	165	180
178. Accidental absorption of irrespirable or poisonous gas	...	...	...	...	...	...	...	...	1
179. Other acute accidental poisoning (not by gas)	2	1	...	1	...	...	...	...	19
180. Conflagration	...	9	2	11	...	7	1	8	775
181. Accidental burns (conflagration excepted)	...	80	13	80	7	444	251	695	1,688
182. Accidental mechanical suffocation	13	153	12	166	14	1,047	475	1,522	26
183. Accidental drowning	...	...	...	...	...	25	1	26	3
184. Accidental injury by firearms	...	1	...	1	...	2	...	2	72
185. Accidental injury by cutting or piercing instruments	3	50	6	53	2	13	6	19	10,978
186. Accidental injury by fall, crushing, etc.	29	660	27	689	27	9,004	1,285	10,289	14,334
187. Cataclysm	40	798	10	838	28	11,633	1,863	13,496	521
188. Injury by animals (poisoning by venomous animals excepted)	...	8	1	8	1	1	...	1	8
189. Hunger or thirst	14	145	15	159	17	291	71	362	4
190. Excessive cold	...	8	1	8	...	...	...	...	5
191. Excessive heat	...	1	...	1	...	2	1	3	5
192. Lightning	...	1	...	1	...	3	...	2	...
193. Electricity (lightning excepted)	...	3	...	3	...	2	...	...	...
	...	...	...	...	...	...	...	...	...

DISEASES	In-Patients					Out-Patients			Total Cases In- and Out-Patients
	Remain- ing in Hospitals at end of 1932	Yearly Total		Total Cases Treated	Remain- ing in Hospitals at end of 1933	Males	Females	Total	
		Admis- sions	Deaths						
194. Other and unstated forms of accidental violence: 1. Inattention at birth ... ..	...	22	...	22	...	159	23	182	204
2. Other causes included under 194 ... ..	53	604	17	657	68	6,320	1,045	7,365	8,022
195. Violent deaths of unstated nature (i.e. accidental, suicidal, etc.)	...	2	...	2	...	...	...	...	2
196. Wounds of war ... ..	...	...	...	...	...	...	...	...	...
197. Execution of civilians by belligerent armies ... ..	...	...	...	...	...	...	...	...	...
198. Execution ... ..	...	...	...	...	...	...	...	...	...
XVIII.—Ill-defined Diseases.									
199. Sudden deaths ... ..	...	2	2	2	...	2	1	3	5
200. Cause of death unstated or ill-defined ... ..	...	...	...	...	...	...	...	...	...
201. Pyrexia of uncertain origin ... ..	3	91	1	94	...	1,445	458	1,903	1,997
202. Other ill-defined diseases ... ..	12	133	9	145	2	521	232	753	898
Total cases treated by Medical Staff on tour	1,484	30,680	1,248	32,164	1,473	355,596	158,601	514,197	546,361
Total cases treated by African Dispensers	...	...	...	...	...	42,551	45,970	88,521	88,521
Total cases treated by Missionaries supplied with Government drugs and equipment ... ..	...	565	20	565	39	72,212	46,827	119,039	119,604
	...	758	8	758	20	...	...	46,399	47,157
GRAND TOTAL	1,484	32,003	1,276	33,487	1,532	470,359	251,398	768,156	801,643



# Annual Report of the Medical Laboratory, Dar es Salaam, 1933.

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## ADMINISTRATIVE.

This report represents a summary of the work and activities of the Medical Laboratory, Dar es Salaam, and the Vaccine Lymph Institute, Mpwapwa, for the year ending 31st December, 1933.

The year has been one of continued economy, and staff reductions and changes have involved considerable reorganization with curtailment of certain activities.

## STAFF.

At the close of the year the European personnel of the combined laboratories was reduced to two officers.

The untimely death in July of Mr. W. Whitley, Analytical Chemist, deprived us of a most valuable officer, who had already developed a very important branch of the Laboratory's work.

Other service exigencies necessitated the transfer of Dr. Skan to Morogoro in August. It had been intended that this officer should relieve Dr. D. E. Wilson, in charge of the Vaccine Lymph Institute, Mpwapwa, and hence on the latter's departure on leave no relief was available. As a result it was necessary to manufacture large stocks of lymph, to close the Institute temporarily and to transfer the issue of lymph from Mpwapwa to Dar es Salaam during the period of Dr. Wilson's leave. This procedure though unsatisfactory, was inevitable but in the event of emergency demands, the machinery of lymph manufacture can be put in working order at short notice.

Dr. Burke-Gaffney, Acting Deputy Director of Laboratory Service, and Mr. Hammond, Laboratory Assistant, were on duty throughout the year. The latter officer took charge of the issue of vaccine lymph, in addition to the other extra duties involved as a result of reduced staff, and his services during this emergency have been of great value. Mr. Amar Singh was posted as clerk in place of Mr. A. da Cruz who proceeded on leave at the beginning of the year. The African staff remained the same as in 1932.

## FINANCIAL.

Further efforts at strict economy in the administration of the Laboratory Division resulted in considerable saving. The expenditure under "Upkeep of Laboratory" amounted to Shs. 1,005/31 as compared with Shs. 1,319/93 in 1932. Indents to Crown Agents were reduced from £240 in 1932 to £176 in 1933. The revised system of ordering vaccines and sera quarterly as required in lieu of a standing order saved considerable wastage as anticipated, and the amount of time-expired stock held was reduced to a minimum. Actual expenditure under this heading was, however, increased by £63. This was due to emergency demands for various items, particularly for T.A.B. vaccine, for which there was a large demand in Mbeya District owing to the outbreaks of typhoid fever.

The proposal referred to in the 1932 Report that laboratory fees should be reduced was approved, and a revised tariff accordingly prepared and published in the *Gazette*. The anticipated increase of revenue resulting therefrom was realized, the fees amounting to Shs. 1,892/51 as compared with Shs. 1,340/74 in 1932.

#### BUILDINGS AND EQUIPMENT.

No alterations of a major nature were made. It is hoped that the Dispensary building will be made available for laboratory use in the coming year. This will be very satisfactory as the space is urgently required, since the need for accommodation for the library and museum is pressing.

#### LIBRARY AND MUSEUM.

The number of periodicals taken has now been reduced to the lowest possible limits. The projected museum referred to in 1932 has been commenced and although the first steps were only made in March, some 350 specimens have already been prepared. The preparation and mounting of specimens and fittings was undertaken by Mr. Hammond and the results reflect creditably on his skill and ingenuity in this direction. Further details will be found in the body of the report.

#### INSTRUCTIONAL COURSES FOR AFRICAN ASSISTANTS.

This was continued during the year, both in the Laboratory and in connection with the Sewa Hadji Hospital. Keenness and aptitude for the work continues to be displayed.

#### FIELD WORK.

No field work, as such, could be carried out with the staff available but the following tours were made by members of the staff:—

Early in the year Dr. Skan travelled by the Central Line and to the Lake Provinces where he collected samples of serum for despatch to the Rockefeller Foundation Laboratory in connection with yellow fever protection tests. Careful selected samples of representative individuals together with their histories were collected and despatched and it is gratifying to record that they were received in New York in good condition. As it was necessary to collect some 50ccs. of blood from each patient and prepare 20-25ccs. of sterile serum under field conditions, it will be appreciated that the results reflect considerable credit on the careful manner in which the investigation was carried out. It might be added that one positive result was obtained from a native resident in Mwanza and in view of this further samples have since been obtained from Mwanza and Bukoba.

In June, the Acting Deputy Director of Laboratory Service proceeded to Mbeya to carry out an epidemiological survey of the Minor Settlement, from which sporadic outbreaks of typhoid fever had been reported during the year. It is satisfactory to be able to record that with a minimum of portable laboratory equipment in a small station without any laboratory fittings, it was possible to carry out the essential laboratory investigation without undue difficulty. A report was submitted to the Director of Medical and Sanitary Services, but a brief summary of the laboratory investigations is given under appropriate headings in this report.

In November, the Acting Deputy Director of Laboratory Service accompanied the Director of Medical and Sanitary Services and other Research Officers to the Conference of East African Research Officers held in Entebbe under the auspices of the Governors' Conference. The discussions and interchange of ideas with officers in other territories proved to be of immense value, and has promised a form of future co-operation which cannot fail to be beneficial to the workers concerned.

#### CONTRIBUTIONS TO SCIENTIFIC LITERATURE.

"Forefathers of Tropical Medicine," by H. J. O. D. Burke-Gaffney, *E.A.M.J.*, July, 1933.

"Medico-Legal Aspects of Investigation of Sudden Death," by H. J. O. D. Burke-Gaffney, *E.A.M.J.*, October, 1933.

"Coliform Bacteria in Urine," by H. J. O. D. Burke-Gaffney, *J. Hygiene*, November, 1933.

\* \* \* \* \*

This report is divided into the following sections :—

1. Routine Examinations.
2. Special Investigations.
3. Report of Vaccine Lymph Institute.
4. Report of Analytical Chemist.
5. Appendices.

### PART I.

#### ROUTINE DIVISION.

During the year the time of the staff was devoted almost entirely to routine work. Research other than that directly arising out of routine investigations could only be undertaken on a very small scale, and in the latter half of the year had to be abandoned altogether. The essential and less complicated Public Health chemical analyses and clinical biochemical tests were continued, but otherwise chemical work came to a standstill. In addition, the departure of Dr. Skan and the transfer of the Vaccine Lymph work to Dar es Salaam made it necessary to postpone a number of investigations.

As a result, the quantity of work which it was possible to undertake diminished towards the end of the year. One has unfortunately to record that for the first time in seven years the number of investigations performed in the Laboratory has shown a decrease rather than an increase. The total amounted to 15,722 as compared with 16,862 in 1932. The arrival of the newly-appointed Analytical Chemist will be of considerable assistance in recovering lost ground, but there appears to be little hope that the former output of work can be maintained until such time as the financial position improves.

It should be recorded that during this difficult year the loyal response on the part of all members of the staff to the added work required of them left nothing to be desired.

Routine work is reported under the following headings :—

- |                              |                                    |
|------------------------------|------------------------------------|
| A. Parasitology.             | F. Public Health.                  |
| B. Serology.                 | G. Medico-Legal.                   |
| C. Other blood examinations. | H. Pathology and Morbid Histology. |
| D. General examinations.     | I. Museum.                         |
| E. Bacteriology.             | J. Miscellaneous.                  |



A.—PARASITOLOGY.

(1) *Blood films.*

As shown below, 5,627 blood films were examined of which 1,447 were positive.

	No. examined	Malaria	Sp. duttoni	Trypano- somes	Filaria
European ...	541	92	1	1	—
Asiatic ...	1,202	292	1	—	—
African ...	3,884	996	14	—	50
TOTAL ...	5,627	1,380	16	1	50

(a) *Malaria.*

No analyses of the findings are shown as these will be found in the report of the Malaria Research Unit. Towards the end of the year, a scheme was put into force in collaboration with the Malaria Research Officer whereby differentiation of parasite species was carried out in his laboratory by means of thin films from the patients whose thick films were examined in this Laboratory.

(b) *Relapsing Fever.*

(c) *Trypanosomiasis.*

(d) *Filariasis.*

There is nothing of special interest to note under these headings.

(2) *Fæces.*

This year 1,672 specimens were received, an increase of 486 over last year's total: 810 were negative.

	Europeans	Asiatics	Africans	Total
Entamœba histolytica ...	—	—	—	—
Flagellates ...	3	1	9	13
Ankylostoma ...	7	9	639	655
Strongyloides ...	1	—	93	94
Ascaris ...	—	—	47	47
Trichuris ...	2	2	33	37
Tænia ...	—	—	5	5
S. hæmatobium ...	—	—	3	3
S. mansoni ...	—	—	2	2
Oxyuris ...	—	—	6	6
Total positive ...	13	12	837	862
Total negative ...	135	65	610	810
TOTAL ...	148	77	1,447	1,672

An increase in the percentage of ankylostomes found this year will be noted.

(3) *Urine.*

Four hundred were examined for *S. hæmatobium*: 127 were present, being all with one exception, in Africans.

	S. hæmatobium ova	Negative
Europeans ...	—	2
Asiatics ...	1	18
Africans ...	126	253
TOTAL ...	127	273



B.—SEROLOGY.

(1) *The Wassermann Reaction.*

Four hundred and seventy-nine specimens of serum were received, 13 were insufficient for test, 12 proved anti-complementary, 2 were contaminated and 7 were not examined.

The results of the remaining 445 were as follows :—

+	...	...	...	188
+ -	...	...	...	27
-	...	...	...	230
				<hr/>
				445
				<hr/>

The reaction was also performed with 16 specimens of cerebrospinal fluid.

+	...	...	...	2
+ -	...	...	...	—
-	...	...	...	14
				<hr/>
				16
				<hr/>

(2) *The Kahn Test.*

This was carried out with 334 of the above sera, in parallel with the Wassermann reaction.

+	...	...	...	140
+ -	...	...	...	33
-	...	...	...	161
				<hr/>
				334
				<hr/>

(3) *Agglutination Tests.*

Ninety-two specimens of serum were received of which 42 were positive. As reported last year, the majority of the positive results were obtained in specimens from Mbeya.

The results were as follows :—

	Europeans			Asiatics		Africans	
T.	...	...	3	...	6	...	22
TAB.	...	...	1	...	—	...	5
TA.	...	...	2	...	—	...	—
TB.	...	...	2	...	1	...	—
Negative	...	...	13	...	11	...	26
			<hr/>			<hr/>	
TOTAL	...	21	...	18	...	53	
			<hr/>			<hr/>	

C.—OTHER BLOOD EXAMINATIONS.

(1) *Blood culture.*

Only nine were performed, from one of which, an African, a streptococcus was isolated.

(2) *Total counts.*

Seventeen were carried out, seven being in Europeans and five each from Asiatics and Africans.

(3) *Differential counts.*

One hundred and twenty-eight were made, as under :—

Europeans	...	...	65
Asiatics	...	...	31
Africans	...	...	32

(4) *Polynuclear counts.*

Twenty-seven counts were performed.

(5) *Sedimentation Test.*

One test was made in a European.

D.—GENERAL EXAMINATIONS.

(1) *Fæces.*

Routine examination for blood, pus, etc., was made in all fæces samples.

(2) *Urine.*

Of 905 urine specimens, 413 general examinations were made 255 being pathological as shown below.

			Europeans		Asiatics		Africans		Total
Albumin	...	...	37	...	27	...	95	...	159
Pus	...	...	30	...	10	...	42	...	82
Sugar	...	...	2	...	8	...	—	...	10
Hæmoglobin	...	...	1	...	2	...	1	...	4
			<hr/>		<hr/>		<hr/>		<hr/>
TOTAL		...	70	...	47	...	138	...	255

(3) *Clinical Biochemical Examinations.*

Ninety were performed.

Quantitative estimations of glucose in urine	...	59
Blood sugar estimations	...	13
Sugar tolerance tests	...	2
Biochemical examination of cerebrospinal fluid	...	5
Milk for pus	...	2
Fæces for occult blood	...	3
Urine for arsenic	...	5
Urine for bile pigment	...	1

E.—BACTERIOLOGY.

(1) *Fæces.*

Only twenty-five specimens of fæces were cultured and all were free from pathogenic organisms. It is regretted that the special investigations of non-lactose fermenting bacteria in fæces and urine could not be continued this year.

(2) *Urine.*

Bacteriological examination of the urine was made in 84 cases as under :

Europeans				Asiatics		Africans		Total
B. coli	...	24	...	7	...	1	...	32
Gonococci	...	—	...	1	...	1	...	2
M. tuberculosis	...	—	...	—	...	—	...	—
Negative	...	34	...	12	...	4	...	50
TOTAL		58	...	20	...	6	...	84

(3) *Sputum.*

1,251 sputa were examined.

	Europeans		Asiatics		Africans		Total
M. tuberculosis ...	4	...	17	...	519	...	540
Pneumococci ...	2	...	1	...	7	...	10
Negative ...	31	...	183	...	487	...	701
TOTAL ...	37	...	201	...	1,013	...	1,251

The high percentage of M. tuberculosis in Africans is noteworthy. No monilia were recorded this year.

(4) *Nasal and skin smears.*

Two hundred and eighty-one were received, all from Africans.

M. lepræ ...	185
Negative ...	96

(5) *Throat swabs.*

Only ten were received, none of which showed pathogenic bacteria.

(6) *Urethral and vaginal smears.*

Seventy-four were examined.

	Europeans		Asiatics		Africans		Total
Gonococci ...	6	...	10	...	12	...	28
Negative ...	10	...	11	...	25	...	46
TOTAL ...	16	...	21	...	37	...	74

(7) *Pus from abscesses, ulcers, etc.*

Sixty-nine were examined.

	Europeans		Asiatics		Africans		Total
Pyogenic cocci ...	5	...	4	...	38	...	47
Pneumo cocci ...	3	...	1	...	2	...	6
Fusiform bacilli ...	—	...	—	...	7	...	7
B. coli ...	5	...	—	...	—	...	5
B. pyocyaneus ...	1	...	2	...	1	...	4
A. fæcalis ...	14	...	7	...	48	...	69

(8) *Pathological fluids.*

Twenty-three were examined.

	Europeans		Asiatics		Africans		Total
Pleural ...	—	...	2	...	8	...	10
Cerebrospinal ...	—	...	—	...	8	...	8
Synovial ...	—	...	1	...	2	...	3
Peritoneal ...	—	...	—	...	1	...	1
Scrotal ...	—	...	—	...	1	...	1

The examinations were for cells and bacteria. Nothing of unusual interest was recorded.

(9) *Vaccines.*

Twenty-one were prepared.

	Europeans		Asiatics		Africans		Total
B. coli ...	4	...	—	...	—	...	4
Staphylococci ...	7	...	3	...	—	...	10
Mixed catarrhal ...	3	...	2	...	—	...	5
B. pyocyaneus ...	—	...	1	...	—	...	1
A. fæcalis ...	1	...	—	...	—	...	1
TOTAL ...	15	...	6	...	—	...	21

## F.—PUBLIC HEALTH.

### (1) *Waters.*

Weekly bacteriological water examinations were carried out throughout the year. The findings are shown in Appendix I.

Waters from various wells were also examined. In all 64 samples were examined.

### (2) *Foodstuffs.*—12 samples.

Bacteriological and general examination of the following was performed :—

Ham	...	...	...	...	3
Meat	...	...	...	...	1
Meal	...	...	...	...	2
Flour	...	...	...	...	1
Soda-waters	...	...	...	...	5

### (3) *Rats.*

For *P. pestis* 2,996 rats were examined. All were negative. A number of identifications were also made both in Dar es Salaam and in the case of specimens from outstations. Identification was found to be difficult as classification of local rodents is very incomplete. The Acting Deputy Director of Laboratory Service is in communication with the Transvaal Museum regarding classification.

### (4) *Miscellaneous.*

Sewage.—Three samples were examined bacteriologically.

Soil.—Three samples were examined.

Further Public Health examinations are described in the Chemical Report.

### (5) *Katathermometer.*

Daily Katathermometer readings were recorded throughout the year. The findings are shown in Appendix II.

## G.—MEDICO-LEGAL.

Analytical examinations will be found in the Chemical Report. The investigations carried out by this division were the following :—

Tests for human blood, negative	...	...	...	5
„ „ „ „ positive	...	...	...	15
„ „ spermatozoa, negative	...	...	...	7
„ „ gonococci	...	...	...	5
Examination of tissues	...	...	...	7
Examination of bones of skull	...	...	...	2
Physiological tests on animals	...	...	...	7
			TOTAL	48

## H.—PATHOLOGY AND MORBID HISTOLOGY.

This department has developed to some length this year. The number of post-mortem examinations performed increased, and a larger number of tissue sections were also made. Some interesting material was thus collected for the newly-formed museum.



(1) Autopsies.

Thirty-seven were performed many of which were of a medico-legal nature. The causes of deaths were as follows :—

Cause of Death							Race	Number
Carcinoma, liver	...	...	...	...	...	...	African	2
Generalized tuberculosis	...	...	...	...	...	...	„	1
Lobar pneumonia	...	...	...	...	...	...	„	1
Peritonitis	...	...	...	...	...	...	„	1
Thrombosis, mesenteric vessels	...	...	...	...	...	...	„	1
Septicæmia	...	...	...	...	...	...	„	3
Cerebrospinal meningitis	...	...	...	...	...	...	Asiatic	1
„	„	„	„	„	„	„	European	1
Meningoencephalitis	...	...	...	...	...	...	African	2
Pancreatitis	...	...	...	...	...	...	„	1
Bronchopneumonia	...	...	...	...	...	...	„	1
Toxæmia	...	...	...	...	...	...	European	1
Pulmonary tuberculosis	...	...	...	...	...	...	African	1
Stab wound, chest	...	...	...	...	...	...	Asiatic	1
„	„	„	„	„	„	„	African	1
Poisoning	...	...	...	...	...	...	European	1
Cut, throat	...	...	...	...	...	...	Asiatic	1
Multiple wounds	...	...	...	...	...	...	African	1
Gunshot wound, chest	...	...	...	...	...	...	„	1
Hanging	...	...	...	...	...	...	„	5
Drowning	...	...	...	...	...	...	„	3
Avulsion of arm	...	...	...	...	...	...	„	1
Injury by high explosive	...	...	...	...	...	...	„	2
Crushing by machinery	...	...	...	...	...	...	„	1
Burns	...	...	...	...	...	...	Asiatic	1
Fractured skull	...	...	...	...	...	...	African	1
							TOTAL	37

(2) Morbid Histology.

Three hundred and thirty-five pieces of tissue were received from 194 individuals. Sixty-nine were malignant and 13 benign neoplasms. The findings were as follows :—

NEOPLASMS.

(a) Benign.

Type					Position			Race	Number
Papilloma	...	...	...	...	Penis	...	...	African	4
„	...	...	...	...	Leg	...	...	„	1
Angioma	...	...	...	...	Scalp	...	...	„	1
Fibroma	...	...	...	...	Thigh	...	...	„	1
„	...	...	...	...	Breast	...	...	„	1
Fibromyoma	...	...	...	...	Uterus	...	...	„	4
„	...	...	...	...	„	...	...	Asiatic	1
								TOTAL	13

(b) Malignant.

Carcinoma.

Type				Position			Race	Number	
Adenocarcinoma	...	...	...	Liver (primary)			African	...	3
"	...	...	...	Liver (secondary)			"	...	1
"	...	...	...	Uterus	...	...	"	...	2
"	...	...	...	Breast	...	...	"	...	3
"	...	...	...	"	...	...	Asiatic	...	1
"	...	...	...	Pancreas	...		African	...	2
"	...	...	...	Stomach	...		"	...	3
"	...	...	...	Thyroid	...		"	...	1
"	...	...	...	Paroted gland	...		"	...	1
Epithelioma	...	...	...	Jaw	...	...	"	...	2
"	...	...	...	Eye (primary)	...		"	...	2
"	...	...	...	Eye (secondary)	...		"	...	2
"	...	...	...	Leg	...	...	"	...	2
"	...	...	...	Glands	...	...	"	...	1
"	...	...	...	Penis	...	...	"	...	6
"	...	...	...	Lip	...	...	"	...	1
"	...	...	...	Breast	...	...	"	...	3
"	...	...	...	Arm	...	...	"	...	1
"	...	...	...	Scalp	...	...	"	...	1
"	...	...	...	Scrotum	...		"	...	1
"	...	...	...	Bladder	...		"	...	2
"	...	...	...	Pinna	...	...	"	...	1
TOTAL								...	42

Sarcoma.

Type				Position			Race	Number	
Melanoma	...	...	...	Finger	...	...	African	...	1
"	...	...	...	Foot	...	...	"	...	2
"	...	...	...	Eye	...	...	"	...	1
Fibrosarcoma	...	...	...	Lip	...	...	"	...	1
"	...	...	...	Scrotum	...		"	...	1
Round-celled	...	...	...	Femur	...	...	"	...	1
"	"	...	...	Eye	...	...	"	...	1
"	"	...	...	Nose	...	...	"	...	1
"	"	...	...	Groin	...	...	"	...	2
"	"	...	...	Kidney	...	...	"	...	1
Osteosarcoma	...	...	...	Femur	...	...	"	...	2
Myelosarcoma	...	...	...	Tibia	...	...	"	...	1
Polymorphic Sarcoma	...	...	...	Abdomen	...		"	...	1
TOTAL								...	16

Other Neoplasms.								
Type	Position						Race	Number
Mixed parotid tumour	...	...	...	...	...	...	African	4
Teratoma	...	...	...	Breast	...	...	"	1
"	...	...	...	Neck	...	...	"	1
"	...	...	...	Ovary	...	...	"	1
Mixed submaxillary	...	...	...	...	...	...	"	1
Neuroganglioma	...	...	...	...	...	...	"	1
Cystic tumour	...	...	...	Scalp	...	...	"	1
Granuloma, anus	...	...	...	...	...	...	"	1
							TOTAL	11

Total neoplasms:—

Benign	...	...	...	...	...	13
Malignant:						
Carcinoma	...	...	...	...	...	42
Sarcoma	...	...	...	...	...	16
Others	...	...	...	...	...	11
				TOTAL	...	82

(3) More localized conditions.

Type							Race	Number
Pericarditis	...	...	...	...	...	...	African	1
Biliary cirrhosis	...	...	...	...	...	...	"	4
Elephantiasis	...	...	...	...	...	...	"	1
Appendicitis	...	...	...	...	...	...	"	3
"	...	...	...	...	...	...	European	1
"	...	...	...	...	...	...	Indian	1
Hydronephrosis	...	...	...	...	...	...	African	1
Meningitis	...	...	...	...	...	...	"	2
"	...	...	...	...	...	...	European	1
Endometritis	...	...	...	...	...	...	"	2
Nephritis	...	...	...	...	...	...	African	1
Splenomegaly	...	...	...	...	...	...	"	1
Abortion	...	...	...	...	...	...	European	2
"	...	...	...	...	...	...	Asiatic	2
Congestion, liver	...	...	...	...	...	...	African	2
Inflammation	...	...	...	...	...	...	"	4
Blood clot	...	...	...	...	...	...	"	4
Normal	...	...	...	...	...	...	...	20
Unfit for section	...	...	...	...	...	...	...	11
Tubercular dactylitis	...	...	...	...	...	...	African	1
" pericarditis	...	...	...	...	...	...	"	1
" adenitis	...	...	...	...	...	...	"	3
" orchitis	...	...	...	...	...	...	"	1
" epididymitis	...	...	...	...	...	...	"	3
" peritonitis	...	...	...	...	...	...	"	1
" meningitis	...	...	...	...	...	...	"	1
" pneumonia	...	...	...	...	...	...	"	2
Syphilitic orchitis	...	...	...	...	...	...	"	2
" encephalo-meningitis	...	...	...	...	...	...	"	2
							TOTAL	81

(4) *Generalized conditions.*

Type	Race	Number
Toxæmia ... ..	African ...	4
Bronchopneumonia ... ..	„ ...	3
Lobar pneumonia ... ..	„ ...	5
Schistosomiasis ... ..	„ ...	2
Typhoid ... ..	European ...	1
Rabies ... ..	African ...	1
Lymphadenoma ... ..	„ ...	2
Leukæmia ... ..	„ ...	3
Cerebrospinal meningitis ... ..	Indian ...	1
Yaws ... ..	African ...	1
Encephalitis ... ..	European ...	1
Trypanosomiasis ... ..	African ...	7
	<b>TOTAL</b> ...	<b>31</b>
<b>Total: Neoplasms</b> ... ..		<b>82</b>
<b>Local conditions</b> ... ..		<b>81</b>
<b>General conditions</b> ... ..		<b>31</b>
		<b>194</b>

I.—MUSEUM.

The museum was only commenced in March, and development is much hampered by lack of space. At present it is housed in the Laboratory porch, but this is already becoming overcrowded.

At present, the museum is divided into two sections, Pathological and General. The pathological section contains naked eye specimens, together with coloured diagrams showing the microscopic changes in the more interesting cases. The general section consists of clinical specimens and photographs, zoological specimens, medico-legal specimens, toxicological specimens, etc. In addition there are shown a number of models of common laboratory tests.

The response from medical officers and others has been excellent and it is hoped that in time a representative collection will be obtained. Each collection bears the name and station of the donor. Including entomological specimens in three collections, presented by Dr. Mackay and Mr. McHardy, the specimens now amount to 345, as shown below :—

Pathological specimens ... ..	33
„ diagrams ... ..	20
Medico-legal specimens ... ..	10
Clinical „ ... ..	12
Models „ ... ..	4
Zoological „ ... ..	16
Entomological „ ... ..	250
<b>TOTAL</b> ... ..	<b>345</b>



## J.—MISCELLANEOUS.

The following miscellaneous specimens were examined :—

### (a) Veterinary :

Blood, dog	...	...	...	...	2
„ cow	...	...	...	...	4
Sputum, dog	...	...	...	...	1
Cysts, goat	...	...	...	...	1
Tapeworm ...	...	...	...	...	1
Milk	...	...	...	...	3
Skin scrapings, cow	...	...	...	...	2

### (b) Others :

Filters examined ...	...	...	...	...	1
Scrapings for fungi	...	...	...	...	6
Silk for Customs ...	...	...	...	...	1
Microscopes examined	...	...	...	...	14
Ticks for infectivity	...	...	...	...	8
Calculi	...	...	...	...	2
Maize	...	...	...	...	1

TOTAL	...	47
-------	-----	----

## PART II.

### SPECIAL INVESTIGATIONS.

As already noted, research work as such was almost at a standstill, as the staff was occupied fully with carrying out the essential routine work. Some tentative work was commenced in connection with ulcers, which it was intended to study at some length. Examination of the bacterial flora, together with blood calcium estimation and Wassermann reactions of the patient's blood was carried out in a number of cases but no results of any value have so far been determined. A note in connection with the serological findings might, however, be worth recording. Blood was tested by the Wassermann and Kahn reactions in the case of 80 sera from patients suffering from ulcers, with the following results :—

				Wassermann		Kahn
+	...	...	...	46	...	46
+ -	...	...	...	4	...	10
-	...	...	...	30	...	24

It is of interest to note that the number of full positives in each case was the same, whilst the Kahn test accounted for more + - reactions than the Wassermann. Taking into account the known sensitiveness of the Kahn test this is probably a true criterion of the actual serological states. That less than 30 per cent. of the bloods should have been serologically negative is not without significance.

It was hoped to continue the typing of pneumococci more fully this year, but again owing to pressure of other work and a limited amount of type serum, only a few tests were performed.

### *Mbeya Epidemiological Survey.*

Reference has already been made to this investigation. The summary was an interesting study in laboratory methods under unfavourable conditions.

A supply of solid media, sterilized glassware, etc., was taken and an incubator improvised by means of a tin lined with cotton wool, left in the embers of the Hospital kitchen fire overnight. A temperature fluctuating between 25°-35°C. was thus obtained and found adequate for the growth of ordinary bacteria.

The following samples were examined with the results shown :—

#### *Fæces.*

Eleven samples were examined, four from Europeans, one from an Asiatic and the remainder from Africans. *B. typhosus* was isolated from one European.

#### *Waters.*

Seven water samples were examined bacteriologically, all being taken from streams or furrows. Excretal *B. coli* was found in 1·0cc. in three.

#### *Milk.*

One milk sample was examined bacteriologically.

#### *Cesspit.*

One sample from a cesspit was examined. No pathogenic intestinal bacteria were isolated.

#### *Wells in Iringa Township.*

A visit was made to four wells in Iringa Township and cultural examinations made on the spot. The following results were obtained :—

Main supply	...	...	No <i>B. coli</i> 10cc.
Well, White House Inn	...	...	<i>B. ærogenes</i> 10cc.
Public well	...	...	<i>B. ærogenes</i> 0·1cc.
Well, European Hospital	...	...	<i>B. coli</i> 10cc.

### PART III.

#### REPORT OF THE VACCINE LYMPH INSTITUTE.

Dr. D. E. Wilson, with full staff, was in charge of the Institute until August. Following his departure on leave, and in the absence of a relief, it was necessary to transfer the stock of lymph to Dar es Salaam temporarily for issue. Before departing Dr. Wilson manufactured a large stock sufficient to serve normal requirements until his return.

At the end of July twenty-four batches of lymph amounting to 12,225ccs. were transferred to Dar es Salaam. Ordinarily coast stations are served from Dar es Salaam and hence this service was extended to embrace all stations. The lymph was issued diluted with a titre of 1 : 5,000. The revenue obtained from sale of lymph to other Governments amounted to Shs. 2,100/-. Mr. Hammond was in charge of the lymph organization until the end of the year.

Although this temporary arrangement has been carried on without mishap, it can only be regarded as an expedient and it is essential that the Institute be reopened and manufacture recommended as soon as staff is available.

During the year 429,562 doses were issued to outstations from the Vaccine Lymph Institute, Mpwapwa, and 409,890 doses were issued from the Dar es Salaam Laboratory, the latter figure including 81,690 doses issued to coast stations.

*List of stations with amounts received during the year.*

Bagamoyo ... ..	3,200	Maneramango ... ..	2,000
Bungajiga ... ..	2,000	Mkalama ... ..	7,650
Bumbuli ... ..	50	Mahenge ... ..	6,800
Biharamulo ... ..	25,000	Mwanza ... ..	62,000
Bukoba ... ..	12,000	Malangali ... ..	2,900
Dodoma ... ..	12,500	Musoma ... ..	48,800
Dar es Salaam... ..	5,840	Manyoni ... ..	6,000
Iambi (Dr. Norberg) ... ..	100	Mbeya ... ..	24,400
Iringa ... ..	56,200	Morogoro ... ..	25,000
Ifakara ... ..	2,200	Moshi ... ..	59,000
Ikoma ... ..	800	Mpwapwa ... ..	4,100
Kilwa ... ..	17,700	Namanyere ... ..	2,600
Korogwe ... ..	500	Nzega ... ..	12,000
Kigoma ... ..	15,400	Njombe ... ..	46,000
Kahama... ..	2,500	Sumbawanga ... ..	14,100
Karema ... ..	800	Shinyanga ... ..	22,400
Kondoa Irangi ... ..	4,800	Singida ... ..	6,000
Kibaya ... ..	1,200	Songea ... ..	127,400
Kibondo... ..	2,400	Shanwa ... ..	14,500
Kilosa ... ..	26,000	Tunduru ... ..	2,400
Kasulu ... ..	1,550	Tabora ... ..	57,750
Kiomboi... ..	12	Tanga ... ..	15,000
Liwale ... ..	4,000	Tukuyu ... ..	42,000
Lindi ... ..	5,900	Utete ... ..	1,200
Lohumbo ... ..	3,000	Zanzibar ... ..	21,000
Mafia ... ..	800		

## PART IV.

### ANALYTICAL REPORT.

Six hundred and thirty-three specimens were dealt with during the year. From August onward in the absence of a Chemist, the only analyses carried out were those of milk samples, and a few of the simpler chemical tests on water, organs, etc.

The principal findings of interest were the following :—

#### *Medical Department.*

Ninety specimens were received. Twenty-five were specimens of organs, native medicines, etc., to be examined for poison. Arsenic was found in one of them and the rest gave negative results. One specimen of urine was tested for sugar, one sample from Meat Rations, Mwanza, for salts, twenty-four specimens of blood from Sewa Hadji Hospital were examined for blood calcium. Five samples of soap from Head Office for moisture and free alkali, and three samples of water from a river at Ruvu near sisal factory were also examined. Nine samples of urine were examined for arsenic which was found in seven.

#### *Health Office.*

One hundred and eighty-seven samples of milk were received and analysed. Out of these five gave low figures in total solids and non-fatty solids. Eight samples of water from water holes containing Paris green were examined for arsenic. Four were positive. One soda-water was examined for chlorine content.



### *Customs.*

The alcoholic strength of one sample of rum was determined, also a sample of refined petroleum re Customs Tariff.

### *Magistrates, Police, etc.*

Nineteen exhibits were received and examined. Twelve were tested for bloodstains, one being negative. One specimen of yellow powder was examined and was found to contain sulphide of arsenic. One root for poison and one liquid sample were examined. The latter was found to contain 30 per cent. sulphuric acid. Two samples of liquor were examined for alcoholic strength.

### *Veterinary Department.*

Three hundred samples of milk were received and analysed in connection with breeding experiments.

### *Public Works Department.*

One sample of water from Lindi for hardness was tested. One sample from Dodoma was tested for chlorine content.

### *Miscellaneous.*

The following twenty-four specimens were examined: Native food for poison, six samples ghee, one sample harbour water, one sample of salt, five samples of *pombe* and *tembo* and one sample of water for analysis, etc.



APPENDIX I.  
Weekly Water Samples, Dar es Salaam.

Date				Main Water ccs.				Control (Laboratory Tap) ccs.			
				25	10	1	0.1	25	10	1	0.1
12th January...	...	...	...	—	—	—	—	—	—	—	—
26th „	...	...	...	—	—	—	—	—	—	—	—
2nd February	...	...	...	—	—	—	—	—	—	—	—
6th „	...	...	...	—	—	—	—	—	—	—	—
15th „	...	...	...	—	—	—	—	AR	—	—	—
27th „	...	...	...	—	—	—	—	—	PY	—	—
2nd March	...	...	...	PY	—	—	—	PY	—	—	—
10th „	...	...	...	—	—	—	—	PY	—	—	—
15th „	...	...	...	—	—	—	—	AR	—	—	—
27th „	...	...	...	PYAR	—	—	—	PYAR	—	—	—
6th April	...	...	...	PY	—	—	—	—	PY	—	—
18th „	...	...	...	—	PY	—	—	—	—	—	—
25th „	...	...	...	—	—	—	—	INT	—	—	—
1st May	...	...	...	AR	—	—	—	PY	—	—	—
8th „	...	...	...	PY	—	—	—	PY	—	—	—
11th „	...	...	...	—	PY	—	—	—	PY	—	—
19th „	...	...	...	PY	—	—	—	PY	—	—	—
31st „	...	...	...	PY	—	—	—	PY	—	—	—
2nd June	...	...	...	PY	—	—	—	PY	—	—	—
12th „	...	...	...	—	—	—	—	—	—	—	—
19th „	...	...	...	—	—	—	—	—	AR	—	—
26th „	...	...	...	—	—	—	—	—	AR	—	—
10th July	...	...	...	PY	—	—	—	—	—	—	—
17th „	...	...	...	—	—	—	—	—	—	—	—
20th „	...	...	...	—	—	—	—	PY	—	—	—
29th „	...	...	...	—	—	—	—	C	—	—	—
8th August	...	...	...	—	AR	—	—	—	—	—	—
15th „	...	...	...	PY	—	—	—	PY	AR	—	—
21st „	...	...	...	AR	—	—	—	—	—	—	—
26th „	...	...	...	AR	—	—	—	—	AR	—	—
4th September	...	...	...	PY	—	—	—	—	—	—	—
7th „	...	...	...	PY	—	—	—	—	—	—	—
18th „	...	...	...	—	PY	—	—	—	—	—	—
23rd „	...	...	...	PY	—	—	—	—	—	—	—
2nd October...	...	...	...	AR	—	—	—	—	—	—	—
9th „	...	...	...	PY	—	—	—	PARA	—	—	—
16th „	...	...	...	—	INT	—	—	PARA	—	—	—
23rd „	...	...	...	PY	—	—	—	—	—	—	—
26th „	...	...	...	—	PY	—	—	—	—	—	—
1st November	...	...	...	—	—	—	—	—	—	—	—
14th „	...	...	...	PY	—	—	—	—	—	—	—
15th „	...	...	...	—	—	—	—	—	—	—	—
28th „	...	...	...	PY	—	—	—	AR	—	—	—
4th December	...	...	...	INT	—	—	—	—	—	—	—
11th „	...	...	...	AR	—	—	—	—	—	—	—
18th „	...	...	...	PY	—	—	—	—	—	—	—
22nd „	...	...	...	—	PY	—	—	—	—	—	—

C — Organisms of B. coli group. AR — Organisms of aerogenes.  
PY — Organisms of pyocyanus. PARA — Organisms of paracolon.  
INT — Organisms of intermediate.

APPENDIX II.  
Katathermometer Readings.

Months	Date	Highest Air Temp.		Date	Lowest Air Temp.		Mean Kata.	Mean Air Temp. C.
		Kata.	C.		Kata.	C.		
January ...	5	9.6	29.5	25th	5.5	31.0	7.3	27.0
February ...	27	9.4	29.0	14th	6.4	30.0	7.4	29.2
March ...	22	9.7	26.0	8th	5.9	29.0	7.4	29.13
April ...	28	10.0	27.25	22nd	6.7	28.0	7.7	28.67
May ...	31	11.5	24.5	16th	7.8	27.0	9.3	72.02
June ...	2	11.3	24.75	7th	8.0	25.5	9.16	24.99
July ...	5	10.5	24.5	17th	8.1	25.5	9.4	24.70
August ...	1	10.1	24.5	4th	7.0	24.0	8.7	24.68
September ...	5	10.2	25.5	11th	5.7	26.0	8.2	25.51
October ...	23	10.0	27.5	16th	7.4	25.5	8.33	26.64
November ...	15	10.1	28.5	28th	6.7	28.5	7.61	28.14
December ...	4	8.1	29.0	22nd	6.3	31.0	7.1	29.70

# APPENDIX III.

## Summary of Examinations.

Parasitological	...	...	...	...	...	7,699
Serological	...	...	...	...	...	887
Bacteriological	...	...	...	...	...	2,318
Pathological	...	...	...	...	...	717
General	...	...	...	...	...	272
Medico-legal	...	...	...	...	...	48
Public Health	...	...	...	...	...	3,101
Chemical	...	...	...	...	...	633
Miscellaneous	...	...	...	...	...	47
GRAND TOTAL						15,722
TOTAL 1932						16,862

H. J. O. D. BURKE-GAFFNEY,  
*Acting Deputy Director of Laboratory Service.*

*31st January, 1934.*





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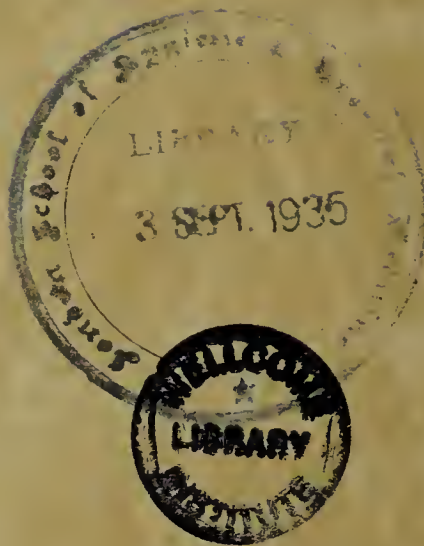
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